A CLINICAL STUDY ON

THANDAGA VATHAM WITH SAGALA VATHA CHOORANAM

Dissertation Submitted To

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI – 32.

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

Branch I – Pothu Maruthuvam

DEPARTMENT OF POTHU MARUTHUVAM

GOVERNMENT SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI-627 002

OCTOBER 2016

GOVERNMENT SIDDHA MEDICAL COLLEGE
PALAYAMKOTTAI, TIRUNELVELI-627002,
TAMILNADU, INDIA.

Phone: 0462-2572736/2572737/Fax: 0462-2582010
Email:gsmc.palayamkottai@gmail.com

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled **"A CLINICAL STUDY ON THANDAGA VATHAM WITH SAGALA VATHA CHOORANAM"** is a bonafide work done by **Dr. M. SUBBUTHAI, (Reg No 321311008) GOVERNMENT SIDDHA MEDICAL COLLEGE, PALAYAMKOTTAI** in partial fulfillment of the University rules and regulations for award of **M.D (SIDDHA), BRANCH-I POTHU MARUTHUVAM** under my guidance and supervision during the academic year **2013-2016 OCTOBER.**

Signature of the Guide:

Dr. A. MANOHARAN, M.D. (S),
PROFESSOR & HOD
DEPT. OF POTHUMARUTHUVAM
GOVT. SIDDHA MEDICAL COLLEGE
PALAYAMKOTTAI - 627 002

Signature of the Head of Department:

Dr. A. MANOHARAN, M.D. (S),
PROFESSOR & HOD
DEPT. OF POTHUMARUTHUVAM
GOVT. SIDDHA MEDICAL COLLEGE
PALAYAMKOTTAI - 627 002

Signature of the Principal:

2/7/16

PRINCIPAL
Govt. Siddha Medical College
Palayamkottai.

CERTIFICATE

Certified that I have gone through the dissertation submitted by **Dr. M. SUBBUTHAI (Reg No. 321311008)** a student of final M.D (S) Branch I Pothu Maruthuvam of this college and the dissertation work has been carried out by the individual only. This dissertation does not represent or reproduce the dissertation submitted and approved earlier.

Place: Palayamkottai

Date: 01.07.2016

Head of the Department

Branch I

PG Pothu Maruthuvam

Govt. Siddha Medical College

Palayamkottai.

GOVT. SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI

SCREENING COMMITTEE

Candidate Reg. No: ...32.13.1008.....

Department: .POTHU MARUTHUVAM....

This is to certify that the dissertation topic .THANDAGA VATHAM WITH SAGALAVATHA CHOORANAM.....

has been approved by the screening committee.

Branch	Department	Name	Signature
1	Pothu Maruthuvam	Dr.S.Aathi Narayanan MD(S).,	
2	Gunapadam	Dr.M.Ravi Chandran MD(S).	
3	Sirappu Maruthuvam	Dr.S.Kaniraja MD(S).,	
4	Kuzhanthai Maruthuvam	Dr.D.K.Soundararajan MD(S).,	
5	Noi Nadal	Dr.S.K.Sasi MD(S).,	
6	Naju Nool Maruthuvam	Dr.M.Thiruthani MD(S).,	

Remarks:

INSTITUTIONAL ETHICAL COMMITTEE,

GOVERNMENT SIDDHA MEDICAL COLLEGE,PALAYAMKOTTAI,

TIRUNELVELI - 627002,

TAMILNADU, INDIA.

Ph.:0462-2572736/2572737/2582010 Fax:0462-2582010

F.No.GSMC/5676/P&D/Res/IEC/2014 Date: 16.07.2015

CERTIFICATE OF APPROVAL

Address of EthicalCommittee	Government Siddha Medical College, Palayamkottai,Tirunelveli, Tamil Nadu, India. Pincode: 627002.
Principal Investigator	Dr.M.Subbuthai, MD(s) - IIYear, Department of PG Pothu Maruthuvam, Reg.No.: 321311008.
Guide	Dr. S.Athi Narayanan, MD(s), H.O.D, Department of Pothu Maruthuvam, Govt. Siddha Medical College and Hospital,Palayamkottai,Tirunelveli District. Dr. A.Manoharan, MD(s), Reader, Department of Pothu Maruthuvam, Govt. Siddha Medical College and Hospital, Palayamkottai, Tirunelveli District. Dr. S.Justus Antony, MD(s), Asst.Lecturer, Department of Pothu Maruthuvam, Govt. Siddha Medical College and Hospital, Palayamkottai, Tirunelveli District.
Dissertation Topic	A Clinical Study on "**Thandagavatham**"with evaluation of trial drug "**Sagalavatha Chooranam**"
Documents Filed	1) Protocol 2) Data Collection Forms 3)Patient Information Sheet 4) Consent Form
Clinical / Non ClinicalTrial Protocol	Clinical Trial Protocol
Informed Consent Document	Yes
Any other Documents	Case Sheet,Investigation Documents
Date of IEC Approval & its Number	GSMC-II-IEC/2015-Br.-I/08/16.07.2015

We approve the trial to be conducted in its presented form.

The Institutional Ethical Committee expects to be informed about the process report to be submitted to the IEC atleast annually of the study, any changes in the protocol and submission of final report.

16/7/2015

Chairman
(Prof.Dr.M.Logamanian)

Member Secretary
(Prof.Dr.S.Soundararajan)

The Tamil Nadu Dr.M.G.R. Medical University

#69, Anna salai, Guindy, Chennai-600 032.

This certificate is awarded to

Dr./~~Mr.~~/~~Ms.~~ SUBBUTHAI . M

for participating as ~~Resource~~ P~~erson~~ / Delegate in the Fourteenth Workshop on

"Research Methodology & Biostatistics"

for AYUSH Post Graduates & Researchers

Organised by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University from 5th to 9th May 2014.

Dr. N. KABILAN M.D. (Siddha)
Reader, Dept. of Siddha

Dr. JHANSI CHARLES, M.D.
Registrar

Prof. Dr. D. SHANTHARAM, M.D., D.Diab.,
Vice-Chancellor

SIMAI
Siddha a timeless healing art

Siddha Medical Association of India

Siddha Workshop Certificate

This is to certify that Dr. M. Subbu Thai ..... Bearing Reg.No. A191 ..... Registered with ..... Medical Council, Address ..... has participated as Faculty / Delegate in Oneday Workshop on topic "Siddha Orthopedics" held on 29th May, 2016 at Gandhi Bhavan, Thiruvananthapuram. Travancore - Cochin Medical Council has Granted Six Credit hours for faculty/ delegates.

SIDDHA MEDICAL ASSOCIATION OF INDIA
Date: 29/05/16
Reg. No. TVM/TC/1063/2015
KERALA

Dr.Anzari.A
Secretary
(SIMAI)

Dr.V.B Vijaya Kumar
Elected CCIM Member (Siddha)
Kerala.

Dr.Abhil Mohan
President
(SIMAI)

GOVERNMENT SIDDHA MEDICAL COLLEGE
PALAYAMKOTTAI

CME

Conducted by

POST GRADUATE DEPARTMENT OF POTHU MARUTHUVAM

Certificate

This is to certify that Dr. M. SUBBUTHAI

of P.G. Pothu Maruthuvam *department has participated in the*

Continue Medical Education Programme on ***Renal Diseases***

held at ***Government Siddha Medical College Palayamkottai*** *On 08 - 06 - 2016 Wednesday*

Prof. Dr. A. MANOHARAN M.D (S)
H.O.D of P.G. Pothumaruthuvam
Government Siddha Medical College, Palayamkottai

Prof. Dr. S. VICTORIA M.D (S)
Principal,
Government Siddha Medical College, Palayamkottai

GOVERNMENT SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI

Certificate of Botanical Authenticity

Certified the following plant drugs used in Siddha formulation Sagalavatha Chooranam (Internal) for the management of Thandaga vatham(lumbar spondylosis) taken up for Post Graduation Dissertation Studies by Dr.M.Subbuthai (Reg No.321311008) PG Dept, of pothu Maruthuvam are correctly identified and authenticated through Visual inspection / Organoleptic Characters / Experience, Education & Training Morphology Microscopical and Taxonomical methods.

S.N	Name	Botanical Name	Family name	Parts used	Quantity
1.	Kodiveli vaer	*Plumbago indica*	Plumbaginaceae	Root bark	75 gms
2.	Notchi vaer	*Vitex negundo*	Verbenaceae	Root bark	75 gms
3.	Milagaranai vaer	*Toddalia asiatica*	Rutaceae	Root bark	75 gms

Station: Palayamkottai

Date: 23/11/15

Authorized Signature

23/11/15

Dr. S. SUTHA M.Sc.,M.Ed.,Ph.D.,
Associate Professor
Dept. of Medicinal Botany
Govt. Siddha Medical College
Palayamkottai, Tirunelveli - 2.

DEPARTMENT OF PHARMACOLOGY
INSTITUTIONAL ANIMAL ETHICAL COMMITTEE
CENTRAL ANIMAL HOUSE REGISTRATION NUMBER: 265/2000/CPCSEA

Title of the Project	: Pharmacological Evaluation of *"Sagalavathachooranam"*
Authors	: DR. M. SubbuthaiM.D.(s)., / 321311008
Proposal number	: PCP/IAEC/012/2015
Date of first received	: 14.12.2015
Date received after modification (if any)	: Nil
Date received after second modification (if any)	: Nil
Approval date	: 26.12.2015
Expiry date	: 28.03.2016
Name of IAEC/CPCSEA Chairperson	: The Head, Department of Pharmacology Periyar College of Pharmaceutical Sciences Trichy – 21.

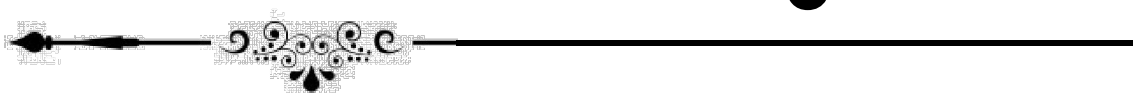
Date : 26.12.2015

K.A.S. MOHAMMED SHAFEEQ, M.Pharm.,
ASST. PROFESSOR,
Periyar College of Pharmaceutical Sciences
TRICHY - 21.

CHAIRMAN
Institutional Animal Ethics Committee
Periyar College of Pharmaceutical Sciences
TRICHY - 21.

CONTENTS

Acknowledgement



ACKNOWLEDGEMENT

I am extremely grateful to God & 18 Siddhars for showered blessings to perform my duties in the dissertation works.

I acknowledge to debt to the **Vice-chancellor**, the Tamilnadu, Dr. M.G.R. Medical University, Chennai.

I express my thanks to the **Special Commissioner**, Indian Medicine and Homeopathy Department, Chennai.

I sincerely thanks to **Dr. S. Victoria, M.D(s).,** Principal, Govt. Siddha Medical College, Palayamkottai for permitting me to take use of the facilities available in this institution.

I express my hearted thanks to **Dr. M. Thiruthani, M.D(s).**, Vice Principal and Govt. Siddha Medical College, Palayamkottai for his valuable guidance in my dissertation work.

I express my whole hearted thanks to Professor **Dr. A. Monoharan, M.D(s).** Head of the Department, Pothu Maruthuvam for very good guidance and encouragement at every step to complete my dissertation work successfully.

I express my thanks to **Dr. T. Komala valli , M.D(s).,** Associate professor, department of pothu maruthuvam, for her valuable suggestions for my dissertation work.

I express my thanks to **Dr. S. Justus Antony M.D(S).,** lecturer ,Department of pothu maruthuvam , for his valuable suggestions for my dissertation work.

I express my thanks to **Dr.G. Subash Chandran M.D(s)., Ph.D., Dr. S. Chithra M.D(s)., Dr.S. Uma Kalyani,M.D(s)., Dr. P. Sathish Kumar M.D(s).,** Lecturers department of Pothu maruthuvam, for there valuable suggestions for my dissertation work.

I express my thanks to **Dr. S. Sutha, M.Sc., Ph.D.,** Associate Professor in Department of Medicinal Botany Govt. Siddha Medical College, Palayamkottai for her help for my dissertation work.

I thanks to **Mrs. N. Naga Prema, M.Sc., M.Phil.,** in Department of Bio Chemistry for helped in eliciting biochemical analysis of trial drug.

I express my thanks to **Dr. M. Kalaivanan, M.Sc., Ph.D.,** in department of Pharmacology, Govt. Siddha Medical College, Palayamkottai for his valuable guidance for my dissertation work.

I express my thanks to **Periyar College of Pharmaceutical Sciences** for helped me in eliciting pharmacological analysis of the trial drug.

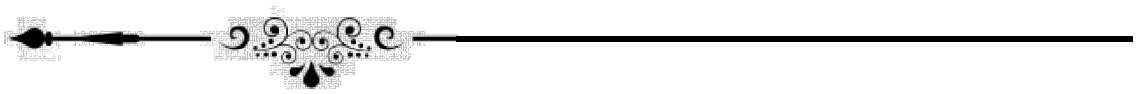
I express my thank to **Mrs. T. Poonkodi, M.A., M.L.I.S** Librarian of Govt. Siddha Medical College, Palayamkottai for permitting me to utilize the college library for my dissertation work.

I express my deep sense of gratitude to my parents & my brothers and sister for their moral support and love and care in all the aspect of my life.

I express my sincere thanks to my brother **MR.M.Maharajan M.sc** for his help for my dissertation work.

I express my sincere thanks to my colleagues and other staff members who helped me during this whole study period.

Introduction



INTRODUCTION

The siddha medicine is the old ancient system of medicine. This system has many curative medicines such as Peru noigal, Mukkutra noigal, Auto immune disorders and Skin diseases. It has a unique feature like destroy the root cause of the disease and remedy for body, mind and soul. Siddha system of medicines not only cure diseases it also have preventive and rejuvenation aspects than other system.

Siddha system classified the diseases on the basis of three Humours, namely Vatham, Pitham, Kabham. As per the siddha system diseases are classified into 4448 diseases. Among 4448 diseases the Vadha diseases are 80 types and Pitha diseases are 42 and Kabha diseases are 21 types are described by yugi munivar in **YUGI VAITHIYA CHINTHAMANI**.

The three vital humours namely as Vatham, Pitham, Kabham are circulate in the body system in different proportions. Each of them has different functions. Healthy body consists of proper combination of three humours. Some changes in Pancha Pootham and Kalangal it can changes or modified the three humours. The disturbances of the vatham which may reduced or exaggerated this leads to vadha diseases.

The most of the siddha medicines were prepared from the purified metals and minerals and animal products also. This clinical trial is discussed about poly herbal formulations of **SAGALA VATHA CHOORANAM**

“வேர்பாரு தழைபாரு மிஞ்சினக்கால் மெல்ல மெல்ல

பற்ப செந்தூரம் பாரே”

- பதிணென் சித்தர் பாடிய சில்லறைக் கோவை

According to this statement herbals are used in first and second to use minerals and metallic preparations to cure the disease. This research work is dealing with lumbar spondylosis. According to siddha this disease is commonly correlate in **THANDAGA VATHAM**

Lumbar spondylosis is a degenerative changes in disc and lumbar spine. Disc degenerate is age related and starts in the third decade. Disc prolapse and Osteophytosis can formed root compression and indirect ischemic neuronal damage.

Degeneration of spine is mostly common in 60 years however degeneration can begin as early as age 30 and there are many cases of lumbar symptoms appearing by age 40.

Approximately 84% of men and 74% of womens are affected in lumbar spondylosis. Lumbar spondylosis was most frequently affected at T_9 –T_{10} and L_3 vertebral levels. Lumbar spondylosis is most commonly affected in L_5 and S_1 levels.

In **AATHMA RAKSHAMIRTHAM** a drug **SAGALA VATHA CHOORANAM** has been indicated for all types of vatha diseases. The ingredients of this Chooranam suppress the vatham by these factors an attempt was made to evaluate the therapeutic efficacy of **SAGALAVATHA CHOORANAM** in the treatment of **THANDAGA VATHAM.**

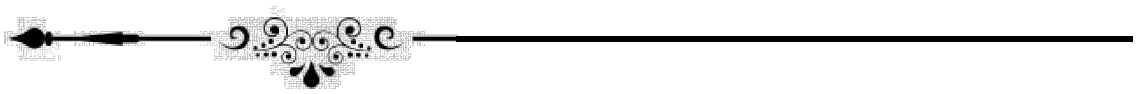
Aim & Objectives

AIM AND OBJECTIVES

The siddha saint yugimunivar is classified vadha diseases about 80 types. In siddha system vatham is considered as the most primitive and curative of disease. Thandagavatham is one among the 80 types of vatha diseases.The disease **Thandaga vatham** can be correlated in modern science is "**lumbar spondylosis**"

- To collect the literary evidence about Thandaga vatham in siddha and modern aspects
- To study the disease Thandaga vatham with various aetiology, pathology, clinical features, diagnosis, treatment aspects.
- To diagnosis the disease Thandagavatham by using modern parameters as well as siddha diagnostic stools like Envagai thervugal.
- To evaluate the clinical efficacy of trial drug **SAGALA VATHA CHOORANAM** in the treatment of **THANDAGA VATHAM** (Lumbar spondylosis)
- To evaluate the biochemical and pharmacological studies of trial medicine **SAGALA VATHA CHOORANAM.**
- To study the disease with age, sex, socio economic status ,habits, and family history
- To analyse the Therapeutic value of the clinical trial drug.
- This study included pharmacological and toxicological study to evaluate the potency of the clinical trial medicine **SAGALA VATHA CHOORANAM.**

Abstract



ABSTRACT

THANDAGA VATHAM (LUMBAR SPONDYLOSIS) is one among the most common problem in people. It is a degenerative disease. Lumbar spondylosis can include herniated disc, buldging disc, bone spurs, and osteo arthritic changes all of which are spinal abnormalities that run the risk of protruding into spinal canal and exerting pressure on spinal nerves.

The disease **THANDAGA VATHAM** can be correlated in modern medicine is **LUMBAR SPONDYLOSIS.**

The trial medicine **Sagala Vatha Chooranam** described in **Aathma Raksha mirtham** which indicates all types of vadha diseases. So I selected this trial drug poly herbal formulation namely **Sagala Vatha Chooranam.**

Biochemical and pharmacological studies were carried out for the clinical trial medicine. For the clinical trial 20 Out patients and 20 In patients were selected according to the inclusion and exclusion criteria.

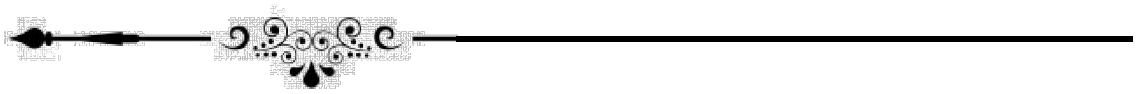
The patients were administered clinical trial medicine is **Sagalavatha chooranam** 2gm with water twice a day during the study period.

The biochemical analysis of **Sagala vatha Chooranam** showed the presence of Calcium, Starch, Ferrous iron, Tannic acid, Amino acids, Unsaturated compound.

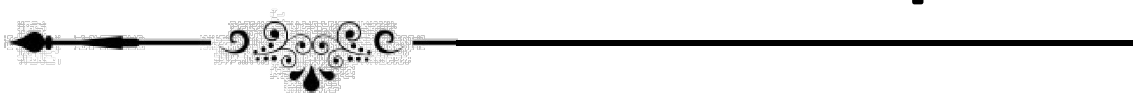
The pharmacological study of the drug **SAGALA VATHA CHOORANAM** showed a good NSAID activity.

At the end of the study 70 % of patients have good results and 30 % of patients have moderate response due to change of paruvakallangal and thega illakkanam.

Review of Literatures



Siddha Aspects



REVIEW OF LITERATURE

SIDDHA ASPECTS

In siddha system the diseases are develops due to the vitiations of three Thodams namely Vatham, Pitham, Kabham.

According to Thirukural,

"மிகினும் குறையினும் நோய் செய்யும் நூலோர்

வளி முதலா எண்ணிய மூன்று"

- திருவள்ளுவர்

Vatham, Pitham, Kabham is called as Uyirthathukal. These are regulates the bodyFunctions and activities of human beings. When they disturb these produce diseases.

Vatham represents vayu, mind, dryness, pain, flatulence, sensitiveness, lightness, and also air.

Pitham represents gastric juice, bile, energy, heat, inflammation, anger, and irritation etc…

Kabham represents feeling of cold, heaviness, running of the nose, passing of mucoid discharge and also saliva.

RELATION BETWEEN SUVAIGAL AND MUKKUTRAM

Tastes are divided into 6 types, these are as follows,

- Sweet
- Salt
- Sour
- Bitter
- Pungent
- Astringent

S.NO	Mukkutram	Panjapootham	Suvai
1.	Vatham	Ether + Air	Bitter
2.	Pitham	Fire	-
3.	Kabham	Earth + water	Sweet

Some tastes will aggravate vatham and some tastes neutralize the vatham. If the vatham is increased thus produce alteration in taste in tongue, this is useful for diagnosis of the disease.

LOCATION:

According to Siddha maruthuvanga churukkam the vatham lives in abanam to navel.

“நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்

நாபிக்குக் கீழென்று நவில லாகும்”

-சித்த மருத்துவாங்கச் சுருக்கம் பக்க எண் 140

Vatham is lives in other places are

Abanan	Malam
Idakalai	Unthiyin keel moolam
Kaamakkodi	Hip bone
Skin	Nerves
Joints	Hair follicles and Muscles

CLASSIFICATION:

Classification of vatha diseases are described by various siddha literatures as seen as below

S.NO	NAMES OF SIDDHA BOOK	TYPES
1.	Yugi vaithiya chinthamani “என்னவே வாதந்தாணெண்பதாகும்”	80
2.	Siddha maruthuvam pothu	85
3.	Agathiyar Guru naadi 235	84
4.	Agathiyar Rathna surukam500 “மற்றமே வாதரோகம் வகைஎண்பது நாலே”	84
5.	Astanga sangiragam	85
6.	Agathiyar 2000 “ஏண்பது வாதமாகு மிருவகைப் படுத்திக்காணின் நண்புறு அரைக்கு மேலே நாற்பது வாதமாகும் பண் சேரரைக்கு கீழே பத்து நான்காகு மென்று வண்டு சேர் குழலினாலே வாதத்தின் கூறுதானே”	80
7.	Bogar vaithiyam 700 “வாச் சென்ற வாதம் எண்பதுவும் போகும்”	80
8.	Jeeva rakshamirtham	80
9.	Noi nadal and noi muthal nadal part 2	85
10.	Theraiyar vagadam	81
11.	Anuboga deva ragasiyam	84
12.	Thanvanthiri vaithiyam	80

DESCRIPTION OF VATHA:

As per our siddha aspect the first phase of human life is attributed to vatham and middle of life is pitham and final phase is kabha kalangal. This is explained by following siddha text book is

“வாதமாய் படைத்து
பித்த வன்னியாய் காத்து
சிலேத்தும சீதமாய் துடைத்து”

10 types of Vatham are explained below,

1. PRANAN:

This refers to cardiac plexus in the heart region and controls heart and circulation.

2. ABANAN:

This centre corresponds to the pelvic plexus and is the seat of kundalini or material energy and controls excretion.

3. VIYANAN:

This corresponds to the naso ciliary plexus at the root of the nose and base of the skull and controls “will”

4. UTHANAN:

This corresponds to the pharyngeal plexus in the throat region and controls breathing and speech.

5. SAMANAN:

This responsible for proper digestion and it’s stabilize the other vayus.

6. NAGAN:

It is responsible for intelligence of the individual, it is responsible for opening and closure of eyes.

7. KOORMAN:

It is responsible for opening and closure of eye lids, yawning, vision, closing of mouth.

8. KIRUKARAN:

It is responsible for salivation, and nasal secretion. It involves sneezing, cough, and stimulate appetite.

9. DHEVATHATHAN:

It is responsible for laziness, tiredness, arguing, angry. It helps the movements of the eyeball and it is present in genital region.

10. THANANJEYAN:

It is situated in the nose and it leaves from the body through cranium only on third day after death.

VATHA THEGI UDAL:

According to siddha maruruthuvanga churukkam is clearly mention the following features of vatha thegi ilakanam.

"வாத உடலினனுக்குத் தீயும் ஐயமும் குறைந்து வளி மிகுந்திருப்பதுமன்றி, மெலிந்து உயர்ந்த உடலும், பருத்த அடித் தொடைகளும், நடந்தால் கீல்கள் நெட்டையிடுதலும், தடித்த இமைகளுடன் வட்டமாக விகாரித்துச் சாக்கண் போன்று சுரசுரப்பாயும், சிறிது வெண்மை கலந்தனவாயுமிருக்கும் கண்களும், குளிர்ந்த பார்வையும், சிறிது கறுமை வெண்மை கலந்தனவாயுமிருக்கும் கண்களும், சிறிது வெண்மை கலந்து ஒளிரும் உடல் நிறமும் அவ்வாறு கறுத்து முனை பிளந்த தலை மயிரும், தெளிவான வார்த்தையையும் சில வேளை மனக்கலக்கத்துடன் பட்டும் படாமையுமான தடுமாற்ற வார்த்தையும், தித்திப்பு புளிப்பு, உப்பு, சூடு உள்ள பொருள்களில் சிறிது விருப்பமும், குளிர்ச்சி பொருந்திய பொருள்களில் வெறுப்பும், மிக்க உண்டியும், மிக்க உண்டியெனினும் அற்ப வன்மையும், பெண்களிடத்தில் அற்ப விருப்பும், வீரிய வளர்ச்சிக் குறைவும், புத்திர பெருக்கமும், ஆண்மை உணர்ச்சி அறிவு இவை நிலையின்மையும், விளையாட்டு, இசை அவமதிச்சிரிப்பு, தொக்கணம், வேட்டையாடலில் விருப்பும், தகுதி இன்மை, பகைமை, ஈகையின்மை, பொன்னாலான பொருள்களை கவர்தலில் நினைப்பு முதலிய பண்புகளும் புகழின்மையும், அரைக்கண் மூடிய சிறு தூக்கமும், அத்தூக்கத்தில் விண், மலை, காடு இவைகளில் தான் நடப்பதாகக் காணுகின்ற கனவும், புலமைத் திறமையையும் உண்டாயிருக்கும்."

-சித்த மருத்துவாங்கச் சுருக்கம் , பக்க எண் 170

தண்டகவாதம்

DEFINITION:

T.V.SAMBASIVAMPILLAI AGARATHI is clearly mentioned about its definition.

அவயவங்களை செயலறச் செய்து உடம்பை தண்டத்தைப் போல் வீழ்த்தி நீட்டல், மடக்கல், அசைத்தல் முதலியவை இல்லாமல் சவத்தைப் போல் கிடக்கச் செய்யும் வாத நோயாகும்.

-T.V.சாம்பசிவம்பிள்ளை அகராதி பாகம் **IV**

AETIOLOGY:

The aetiological factors which exaggerate vatha diseases are explained by siddha literatures. These are as follows,

According to YUGI MUNIVAR IN YUGI VAIDHIYA CHINDHAMANI 800:–

"என்னவே வாதந்தா னெண்பதாகும்
இகத்திலே மனிதர்களுக் கெய்யுமாறு
பின்னவே பெண்தனையே சோரஞ்செய்து
பெரியோர்கள் பிராமணரைத் தூடணித்தும்
வன்ன தேவச் சொத்தில் சோரஞ்செய்து
மாதாபிதா குருவை மறந்த பேர்க்கும்
கன்னவே வேதத்தை நிந்தை செய்தால்
காயத்திற் கலந்திடுமே வாதந்தானே. "

- யூகி வைத்திய சிந்தாமணி - பாடல் 243

- Breach of Trust.
- Abusing the elderly people, the priests and also the holy spirits.
- Exploitation of charitable properties.
- Ingratitude towards mother, father and teacher.

"தானென்ற கசப்போடு துவர்ப் புறைப்பு

சாதகமாய் மிஞ்சுகிலும் சமைத்த வன்னம்

ஆனென்ற வாறினது புசித்த லாலும்

ஆகாயத் தேறலது குடித்தலாலும்

பானென்ற பகலுறக்க மிராவிழிப்பு

பட்டினியே மிகவுறுதல் பார மெய்தல்

தேனென்ற மொழியார் மேற்சிந்தை யாதல்

சீக்கிரமாய் வாதமது செனிக்குந் தானே."

-யூகி வைத்திய சிந்தாமணி - பாடல் 244

- Excessive intake of bitter foods, astringent foods and pungent foods.
- Intake of dry and old cooked rice.
- Drinking raw rain water.
- Sleeping during day time and keeping awake during night.
- Undue starving.
- Lifting of heavy loads and sexual Perceptions.

"ஆனான வரன்றனையே மதியாமாந்தர்

ஆகதி பரதேசியர்கட் கன்ன மீயார்

கோனான குருமொழியை மறந்த பேர்கள்

கொலை களவு பொய்காமங் குறித்த பேர்க்கு

ஊனான சடந்தன்னில் வாதம் வந்து

உற்பவிக்கும் வேதத்தின் உண்மைதானே. ”

-யூகி வைத்திய சிந்தாமணி - பாடல் 253

- Disobedient attitude towards God.
- Refusing food for destitute to poor people.
- Disregarding the advice of priests.
- Engaging in murder.
- Stealing.
- Lieing.

“பகரவே வாதமது கோபித் தப்போ

பண்பாக ஸ்திரீ கோஷ்டியது தான் செய்யில்

நகரவே வெகுதூரவழி நடக்கில்

நளிரான காற்றுமே பனிமேற் பட்டால்

மிகரவே காய்கள் கனிகிழங்கு தன்னை

மிகவருந்தி மீறியே தயிர்தான் கொண்டால்

முகரவே முதுகெலும்பை முறுக்கி நொந்து

முழங்காலும் கணைக்காலும் கடுப்பு உண்டாமே”

-யூகி வைத்திய சிந்தாமணி - பாடல் 285

- Including in sexual act during the abnormally increased condition of vatham.
- Walking for a long distance.
- Exposure to chillness.
- Excessive consumption of Rhizomes, fruits, curd, etc.

ACCORDING TO AGASTHIYAR NAADI:-

“சொல்லவே வாதமது மீறிற்றானால்

சோர்வடைந்து வாயுவினால் தேகமெங்கும்

மெல்ல கை கால் களசதியுண்டாகும்

மெய்முடங்கும் நிமிரவொண்ணாத் திமிருண்டாகும்.”

-அகத்தியர் நாடி

- Weakness of the limbs
- Stiffness of joints and Numbness

ACCORDING TO AGASTHIYAR KANMA KANDAM – 300:

In siddha system, many diseases are to be precipitated by kanma, which means the deeds good or bad committed by an individual in his previous and present births. The Genetic dispositions of certain diseases are probably the result of kanma. According to the below verse, vatha disease may also be precipitated by kanma.

“நூலென்ற வாதம் வந்தவகை தானே

நுண்மையாய்க் கன்மத்தின் வகையைக் கேளு

காலிலே தோன்றியது கடுப்ப தேது

கைகாலில் முடக்கியது வீக்கமேது

கோலிலே படுகின்ற விருட்ச மான

குழந்தை மரந்தன்னை வெட்டல்மேல் தோல்சீவல்

நாலிலே சீவசெந்து கால் முறித்தல்

நல்ல கொப்பு தழை முறித்தல் நலித்தல் தானே. ”

- அகத்தியர் கன்ம காண்டம் பாடல் எண் 56

ACCORDING TO THERAIYAR VAAGADAM:

“வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ண முண்டாம்

மோது கட்டு ரோகம் சுர முண்டா மிருமலுமி முறங்கா தென்றும்

ஓது சூரிய வாதமனலாகு நடுக்க முண்டாம் பொருள் களாய்த்

தீதெனவே நரம் பிசித்து சந்துகள் தோறும் கிடுக்குந் தானே. ”

- தேரையர் வாகடம்

- Loss of appetite
- Backache
- Fever
- Cough
- Sleeplessness
- Shivering and pain in joints

“தக்க வாயு கோபித்தால் சந்து வுளைந்து தலைநோவா

மிக்க மூரி கொட்டாவி விட்டங் கெரியு மலங்கட்டும்

ஒக்க நரம்பு தான்முடங்கு முலர்ந்து வாய் நீருறிவரும்

மிக்க குளிரும் நடுக்கமுமாம் மேனி குன்றி வருங்காணே.”

- தேரையர் வாகடம் பாடல் எண் 42

- Painful joints
- Headache
- Excessive yawning
- Constipation
- Burning sensation of the body

- Excessive salivation
- Tremors

ACCORDING TO SIKITCHA RATHNA DEEPAM:

“வாதத்தின் குணமே தன்னில் மயங்குந்தியெங்கும் மலர் சிவக்கும்

பாதங் குளிர்ந்து சருவாங்கம் பற்றிநடக்கு முகங் கடுக்குஞ்

சீதத்துடனே வயிறு புண்ணாஞ் சிரிப்பித்துந் தெறி மூச்சாம்

போதத் தண்ணீர் தான்வாங்கும் புகழும் பஞ்ச குணமாமே. ”

“வாதமே கதித்த போது வாயவ மெழும்புங் கண்டீர்

வாதமே கதித்த போது வாயவ வந்திடுஞ் சன்னி தோசம்

வாதமே கதித்த போது வந்திடும் வியாதி மேலும்

வாதமே கதித்த போது வல்லுடல் மெலிந்து கொல்லும்.”

- Giddiness
- Chillness in the lower extremities
- Excessive thirst
- Pain in the face.

ACCORDING TO AGATHIYAR 2000:

“வாதத்தின் குணத்தைக் கேண்மின் வயிறூதும் பொருமிக் கொள்ளும்

தாதூற்ற உடம்பு கைகால் சந்துகள் கடுப்புத் தோன்றும்

தீதுற்ற சிறுநீர் தானுஞ் சிவந்துடல் கடுத்து விழும்

போதுள்ள வுப்புசமாய் போதவும் பசித்திடாதே ”

“கால்கை கடுக்கும் திமிருண்டாங் கண்ணுந் தூங்கிச் சோபிக்கும்

கோலங் செரியு மங்க மெல்லாங் குளிர்ந்து சந்து கனங்கொள்ளும்

சில மிகுந்து சீர் காணில் சிறுநீர் வற்றி வருமிகவே

மலத்தடங்கண் மான னையாய் மாத வாத ரோகமிதே”

-அகத்தியர் 2000

When vatham is increased it causes,

- Flatulence
- Burning pain in the upper and lower extremities
- Burning and scanty micturition
- Loss of appetite
- Numbness in the limbs

ACCORDING TO PARARASA SEKARAM:

“பாரினிற் பயப்பட்டாலும் பலருடன் கோபித்தாலும்

காரெனக் கருகியோடிக் கழுமரத்து ரத்தினாலும்

ஏர்பெறு தனது நெஞ்சின் மிகத்துக்க மடைந்திட்டாலும்

பாரிய காற்றினாலும் படரீனும் வாதங்காணும்”

- Fear
- Angry
- Stress
- Exposure to cool Air

ACCORDING TO AGATHIYAR GUNAVAGADAM:

“விவரமடா அசதி சன்னி மூளை நோவு

விரிவான மூளையது மிருதுவாகி

அவனிதனில் திடமாகப் போவதாலும்

அப்பனே மூத்திர குண்டிக்காய் வியாதியாலும்

தவமுனிவர் தீர்க்காக்கை மேக ரோகம்

தன்மையுள்ள முத்தண்டு கொடிவியாதி

அவமிலாப் பரிச நரம்பழுத்தங் கண்டால்

அணுகுமடா வாதநோய் ஆகும்பாரே.”

- Brain and kidney diseases,
- Megaroga Nithanam,
- Connective tissue diseases ,

SIGNS AND SYMPTOMS:

Vatham is the major vital force of body. It is formed by the combination of vayu (wind) and agayam (sky). It spreads all over body. Thandagavatham is one among the 80 types of vatha diseases. Signs and symptoms of Thandaga vatham is explained by various siddha text as follows

ACCORDING TO YUGI VAITHIYA CHINTHAMANI 800:

‘‘வழுத்தவே மூலாதாரத்தைப் பற்றியே

மருவியே மேலேறி முதுகுண்டாதல்

விழுத்தவே சிரசில் வந்து வியர்வுமாகி

விகுவாக நோவாகி மேனி கன்னி

பத்தவே உடம்பெங்கும் பஞ்சு போலாம்

பாங்கான மலசல மஞ்சளாகும்

குழுத்தவே தெண்டமாம் வாதந்தன்னைக்

கூறினோங் குணமெல்லாங் கூர்ந்து பாரே”

-யூகி வைத்திய சிந்தாமணி பாடல் 288

“கூர்ந்திட்ட மலசலங்கள் துரிதமானால்

கொண்ட டக்கிப் பின்புதான் கொடிதாய் தள்ளி

ஊர்ந்திட்ட சரீரத்தி லுதிர மீறி

உறத் தேயத்து தலையதனி லெண்ணெய் வார்க்கில்

வார்த்திட்ட வழி நடக்கில் மெத்த வந்தான்

வாதந் தானுற்பவித்து நடை கொடாமல்

நார்ந்திட்ட நரம்போடு எலும்பிற் சூழ்ந்து

நணுகியே யோடி நெஞ்சி வேறுந் தானே”

-யூகி வைத்திய சிந்தாமணி பாடல் 289

யோகத்தின் முதல் நிலையில் நுழையும் போது உண்டாகும் கேட்டால், முதுகுத்தண்டின் கீழ்ப்புற மிருந்து தலை வரையிலும் கிளம்பிய வாயுவினால் ஏற்படும்நோயாகும். இந்நோயில் வியர்த்தல், உடல் இறுகுதல், வலித்தல், உடல் பழுத்துப் பஞ்சுபோல் வெளுத்தல், மலமும் சிறுநீரும் மஞ்சளாதல் என்னும் குறி குணங்களைக்காட்டும்.

தண்டக வாயுவிலுண்டாகும் கழிச்சலை அடக்கி வருவதலால் சின்னாட்கள்சென்ற பின்பு அக்கழிச்சல் அடக்க முடியாத அளவில் மிகுந்து கழியத் தொடங்கும் அதனால் உடல் முழுமையுள்ள குருதி தன்னளவில் மிகுந்து பாயும். அன்றியும் இந்நோய் முழுமையும் போகாதிருக்கையில் தலை முழுகல், அதிகத் தொலைவுநடத்தல் இவற்றை மேற்கொள்ளில் வளிக்குற்றம் மிகுந்து நரம்பு, எலும்புகளைப் பற்றிச்சூழ்ந்து நடக்க முடியாமற் செய்து அவ்வாயு நெஞ்சு வரையும் பாயும்.

ACCORDING TO THANVANTHIRI VAITHIYAM:

“ஆமகட்டதனால் வாயு வதிகமாய்ச்சிலேற் பனத்தைத்

தூமகட்டாகச் சேர்த்துத் தடித்திடுஞ் சரீர மெல்லாம்

நோமக் கட்டான மேனி நுவலிளைப் பெயர்ப்புத் தோன்றும்

தாமக் கட்டான ரோகந் தண்டக வாதமாமே”

-தன்வந்திரி வைத்தியம்

ஆமத்துடன் வாயு அதிகரித்து கபத்துடன் சேர்ந்து சரீரத்தை ஸ்தூலிக்கச்செய்யும். சரீரம் வாட்டமடையும்.

- Generalized odema
- General weakness

ACCORDING TO ROGANIRNAYA SARAM:

“தேகம் தண்டத்தைப் போல் விழுந்து அசைவில்லாமல் இருக்கும்”

-ரோக நிர்ணய சாரம்

- Body is rendered like a log of wood.

ACCORDING TO JEEVA RATCHAMIRTHAM:-

“வாயுவானது எண்ணெய் வஸ்து, மந்தவஸ்து, சீர வீரிய வஸ்து, தயிர், அதிகலவணம், பகல் நித்திரை, பதினான்கு வேகங்களை மறித்தல் ஆகியவற்றால் பிறந்து சப்ததாதுக்களிலும் வியாபித்து அவைகளைக் கலைத்துவிட்டு ஆமாசயஸ்தானத்தை அனுசரித்துச் சிலேத்ம பித்தங்களைத் தன்னுடன் சேர்த்துக் கொண்டு அவயவங்களின் செயலை மாற்றிவிடும். இதனால் ரசாதி தாதுக்களில் மரத்தல்,சீதளம், உள்ளெரிச்சல், சரீரங் கனத்தல், ஞாபகமறதி, பிரமை, சுழலல் போலிருத்தல், இளைப்பு, அதிக வேதனை, நீர்க்கட்டு என்னும் இக்குறிகுணங்களோடு தேகமானது தண்டத்தைப் போல விழுந்து அசைதலும் நீட்டல் முக்கலும் எழுதலும் இல்லாதிருக்கும்.

இது தேகத்தை தண்டைப் போல நீட்டி விடுதலால் தண்டக வாதம் எனப்பேர்பெற்றது.''

-அனுபோக வைத்திய தேவரகசியம் (முதல் பாகம்) , பக்க எண் 164

- Numbness
- Burning sensation
- Loss of memory
- Giddiness
- Dyspnea
- Body pain
- Anuria
- Body is rendered like a log of wood

ACCORDING TO SIKITCHARATHNADEEPAM:-

வாயுவானது மூலாதாரத்தைப் பற்றி மேலேறி முதுகிலிருந்து சிரசில் வந்து வியர்த்து நோயுண்டாக்கி சர்வாங்கத்தையும் நோயுறச் செய்வதுடன் மலசலம் மஞ்சள் வர்ணமாகவும் தேகத்தை தண்டகம் போல் நீட்ட விடாமல் செய்யும்.

-சிகிச்சா ரத்ன தீபம்

- **Yellow colour faeces**
- **Yellow colour urine**
- **Body is rendered like a log of wood**

PATHOPHYSIOLOGY:

According to Theraiyar ,

"வாதமாலாது மேனி கெடாது"

Vatham is the initiator of all forms of activity .The primary factor affected first is vatham and followed by pitham and kabam. The alteration of vatham is due to irregular diet, physical activities, seasonal variations, which may be reduced or exaggerated the vatham. It produce disturbances of other dosha.

FOOD VARIATIONS:

"புளிதுவர் விஞ்சுங்கறி யாற்பூரிக் கும்வாதம்

ஒளியுவர் கைப்பேறில் பித்துஞ்சீறும்-கிளிமொழியே

கார்ப்பிணிப்பு விஞ்சிற் கபம் விஞ்சுஞ் சட்டிரதச்

சேரப் புணர் நோயணுகாதே"

நோய் நாடல் நோய் முதல் நாடல் பாகம் 1

பக்க எண் 23

- Sour and astringent increases vatham.
- Salt and bitter increases pitham.
- Pungent and sweet increases kabham.

ENVIRONMENTAL FACTORS:

People who are living places can produce the following diseases. Thinai is classified into 5 types

- Kurinji - Kaba noigal
- Mullai - Pitha noigal
- Marutham - No diseases will occur
- Neithal - Vatha noigal
- Paalai - Mukkutra noigal

SEASONAL VARIATIONS:

Seasons are classified into 6 types.

Kar, Koothir, Munpani, Pinpani, Ilavenil, Muthuvenil

Seasonal variations are produce alteration in the three humours.

HUMOUR	THANNILAI VALARCHI	PIRANILAI VALARCHI	NORMAL
Vatham	Muthuvenil	Kaarkalam	Koodhir kalam
Pitham	Kaar kalam	Koodhir kalam	Munpani kalam
Kabham	Pinpani	Ilavenil	Mudhuvenil

Uyir thathukal and udal thathukal get affected it may produce vatha diseases. Any defect in uyir thathukal it may produce derangement in udalthathukal. These are explained below

CHANGES OF UYIRTHATHUKAL IN THANDAGA VATHAM:

Vatham, pitham, kabam is called as **Uyir thathukal**. There are several changes are involved in **Thandaga vatham** is described below

VATHAM:

S l. NO	VATHAM	LOCATION	FUNCTION	THANDAGA VATHAM
1.	Pranan	Chest region	Regulate respiration and controls the mental functions, functions of heart, lungs and brain	Not affected
2.	Abanan	Pelvic region	Control excretion such as sweating evacuation of stools, ejaculation of sperms, micturition, menstruation and parturition.	May affected
3.	Viyanan	Nose and skull	Helps in various movements of the body and responsible for nervous functions and sensation.	Affected

4.	Uthanan	Throat	Responsible for speech, vomiting hiccough, cough.	Not affected
5.	Samanan	Navel	Regulates the digestion and controls all the other vayus.	affected
6.	Nagan	Eyes	Helps in opening and closing of the eyes, intelligence.	Not affected
7.	Koorman	Eyes	Responsible for vision, closure of eyelids	Not affected
8.	Kirukaran	Saliva	Secretion of saliva and mucous secretion in nasal cavity, helps concentration	Not affected
9.	Devathathan	Ocular muscles	It is responsible for laziness and eyeball movements	May affected
10	Thananjeyan	-	It is responsible for degradation of body after death	-

CHANGES OF PITHAM IN THANDAGA VATHAM:

Sl.NO	PITHAM	FUNCTIONS	THANDAGA VATHAM
1.	Analagam	Digestion	Not affected
2.	Ranjagam	Gives nutrition to blood	Not affected
3.	Sathagam	Responsible for willful Activities	Affected
4.	Prasagam	Gives luster to skin	Not affected
5.	Alosagam	Gives strength to eyes	No affected

CHANGES OF KABHAM IN THANDAGA VATHAM:

S.NO	KABHAM	FUNCTIONS	THANDAGA VATHAM
1.	Avalambagam	Controls other kabam.	Not affected
2.	Klethagam	It Lubricates the Food.	Not affected
3.	Pothagam	Responsible for Taste sensation	Not affected
4.	Tharpagam	It acts as coolent for eyes	Not affected
5.	Santhigam	It maintains the Integrity of joints	Affected

CHANGES OF UDAL THATHUKAL:

Sl. No	UDAL THATHUKAL	FUNCTIONS	THANDAGA VATHAM
1.	Saram	Strengthens the body and mind	Affected when Tiredness of body
2.	Senneer	Preserves brightness, boldness, Power, knowledge	Affected when anemia present
3.	Oon	Gives structure and shape to body	Muscle wasting
4.	Kozhuppu	Lubricates the joints	Restricted movements in joints
5.	Enbu	Physical Structure	Produces Degeneration In lumbar vertebra and osteophytic changes
6.	Moolai	Strengthens the bone	Affected
7.	Sukkilam/Suronitham	Reproduction	Not affected

PINIYARIMURAIMAI (DIAGNOSIS):

Diagnosis is very important because it is helpful for correct treatment. In siddha system of medicine have 4 diagnostic tools.

1. PORIYAL ARIDHAL:

The physician should examine the patient by Imporigal.

- Mei - Sensations
- Vai - Taste
- Kan - Vision
- Mooku - Smell
- Sevi - Hearing

2. PULANAL ARIDHAL:

The physician should examined the patient by Impulangal

- Suvai
- Oli
- Ooru
- Osai
- Natram

3. VINADHAL:

Vinadhal means asking questions to patients for diagnostic purpose. So only history taking is important for treatment. Sometimes patient having the unconscious or unable to speak condition the history is taken from neibours.

4. ENVAGAI THERVUGAL:

Envagai Thervugal is one of the diagnostic tool in siddha system.

According to Noi Nadal Noi Mudhal Nadal part 1,

“நாடிப்பரிசம் நாநிறம் மொழிவிழி

மலம் மூத்திரமிவை மருத்துவராயுதம்”

According to Theraiyar,

“மெய்க்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி”

The diagnosis is made by following types

1. Naadi
2. Sparisam
3. Naa
4. Niram
5. Mozhi
6. Vizhi
7. Malam
8. Moothiram

This **Envagai Thervugal** is described below.

1. NAADI:

Naadi is defined as Uyirthathu. The combination of three Uyir vayukkal and three Thasanadigal is forms

Uyirthathukal.

THASA NADIGAL	**UYIR VAYUKKAL**	**HUMOURS**
Idakalai	Abanan	Vatham
Pinkalai	Pranan	Pitham
Suzhimunai	Samanan	Kabham

This can be felt in one inch below the wrist on the radial side by using index, middle and ring fingers this indicates vatham, pitham and kabham respectively.

நாடிகளின் மாத்திரை அளவு:

“மெய்யளவு வாதமொன்று

மேல்பித்தமோரரையாம்

ஐயங்காலென்றே அறி”

-கண்ணுசாமியம்

Vatham 1 mathirai.

Pitham ½ mathirai

Kabam ¼ mathirai

Any derangement in this ratio leads to diseases.

2. SPARISAM:

Through sparisam to know the temperature either heat or cold, smoothness, roughness, sweat, dryness of skin, patches, swelling, abnormal growth, ulcer, pain can be felt.

3. NAA:

To examine the colour, deviation, dryness, coating, ulceration, movements, taste variations, condition of teeth and gum.

4. NIRAM:

To examine the colour changes in the conjunctiva, nails, skin, tongue, teeth, hairs.

5. MOZHI:

To assess the mode of speech, quality of sound (low or high pitch)

6. VIZHI:

To examine the discolouration, structure and shape of eye, and any discharge in eye is also noted.

7. MALAM:

By the examination of Malam to know the nature (solid, semisolid, liquid), colour, quantity, presence of blood, mucous can be noted.

8. MOOTHIRAM:

The examination of Moothiram involved 2 types,

1. Neerkuri

2. Neikuri

1. NEERKURI:

According to siddha maruthuvanga surukkam neerkuri is explained by

“வந்தநீர் கரி எடை மணம் நுரை எஞ்சலென்
றைந்திய லுளவை யறைகுது முறையே”

-சித்த மருத்துவாங்கச் சுருக்கம்

பக்க எண் 510

Examination of neerkuri include 5 findings there are

i) NIRAM

It means colour of urine that is yellow, red, green and black.

ii) MANAM

It means smell of urine, such as pleasant, foul smelling, fish odour, fruit, honey smell.

iii) NURAI

It means frothy nature of urine.

iv) EDAI

Edai means specific gravity of urine.

v) ENJAL

It indicates the deposits in urine such as crystals, salts.

2. NEIKURI:

“நிறக்குறிக் குரைத்த நிருமாண நீரிற்
சிறக்க வெண்ணெய்யோர் சிறுதுளி நடுவிடுத்
தென்றுறத் திறந்தொலி ஏகாதமைத்ததி
னின்றதிவலை போம் நெறிவிழியறிவும்
சென்றது புகலுஞ் செய்தியை யுணரே”

(பொருள்) நீர் நிறக்குறியால் நோயைக் கண்டு பிடித்தற் பொருட்டுச் சொல்லியிருக்கின்ற விதி பொருந்திய சிறு நீரில் ஒரு சிறிய துளி எண்ணெயை நடுவில் கையசைவினால் எண்ணெய்த் துளி சிதறாமல் விட்டு வெய்யிலானது அந்நீரில் படும்படி திறந்து காற்றானது அதில் வீசி அந்த எண்ணெய்த் துளி ஆடாதபடி வைத்து அச்சிறு நீரில் விடப்பட்டிருக்கின்ற எண்ணெய்த் துளியானது செல்லுகின்ற வழியில் கண்ணறிவையும் உயிரறிவையும் செலுத்தி அத்துளி தெரிவிக்கும் நோய் விளக்கத்தை நீ தெரிந்து கொள்வாயாக.

A drop of gingili oil in to the center of the upper surface of urine, if the oil spreads like

- Snake like appearance indicates Vatham
- Ring like appearance indicates Pitham
- Pearl like appearance indicates Kabham
- Mixed reaction indicates Thontham

DIFFERENTIAL DIAGNOSIS:

The clinical features of **Thandaga Vatham** is similar to some other vatha diseases.

They are

1. Aasuva thamba vatham
2. Oorusthamba vatham

1. ஆசுவதம்ப வாதம் :

“வாதமா யுடல்வெளுத்து வழவெல் லாநேரம்
மயக்கமோ டிருமலா யூளை யுண்டாம்
நேதமாய் நெஞ்சடைத்தப் பொறி கலங்கும்
நெருப்பாக உடல்காணு நெடுமூச்சுண்டாம்
கோதுதான் மயக்கத்தில் மருந்தி நீட்டால்
குளிர்ச்சியாய்க் கோபிக்குங் கூச்சலுண்டாம்
புாதந்தான் திமிருணடாய் முட்போலாகும்
படுத்த ஆசுவதம்பம் பகரலாமே”

-யூ.கி.வைத்திய சிந்தாமணி

The Clinical features are:

1. Paleness of the body
2. Cough
3. Chest heaviness
4. Numbness of both lower limbs.
5. Pain present in vertebral column

2. ஊருத்தம்ப வாதம்:

“ஆமென்ற வாதமது உள்ள டங்கி
அடித்துடைதான் குறங்கிரண்டு மளவாய்ப் பற்றி
காமெனற் கைகாலில் விரலு சுற்றிக்
கனத்துமே சாணியது பொதிந்தார் போலத்
தேமென்ற சிரந்தனிலே பார முண்டாய்த்

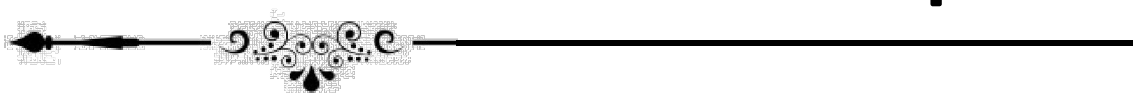
தேமெங்கு மூதியே திமிருண்டாகும்
நாமென்ற நடக்கொணர வொடுக்க மாகி
நலியூருந் தம்பமது நனுகுங்கானே”

The clinical features are

1. Heaviness in both thighs
2. Feelings of cow waste applied over fingers of both hands and feet
3. Numbness feel in whole body
4. Difficulty in walking.

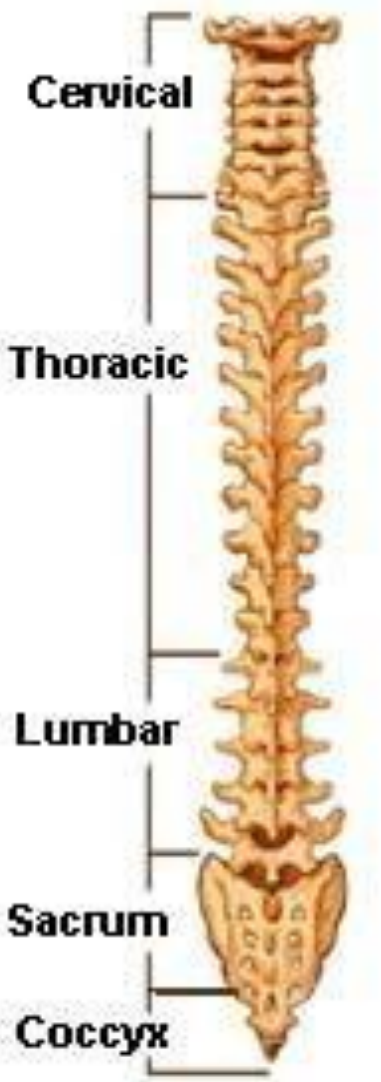
In **Thandaga Vatham** diffuse low back pain, stiffness, radiating pain to lower limbs, yellow coloured urine and stools are present.

Modern Aspects

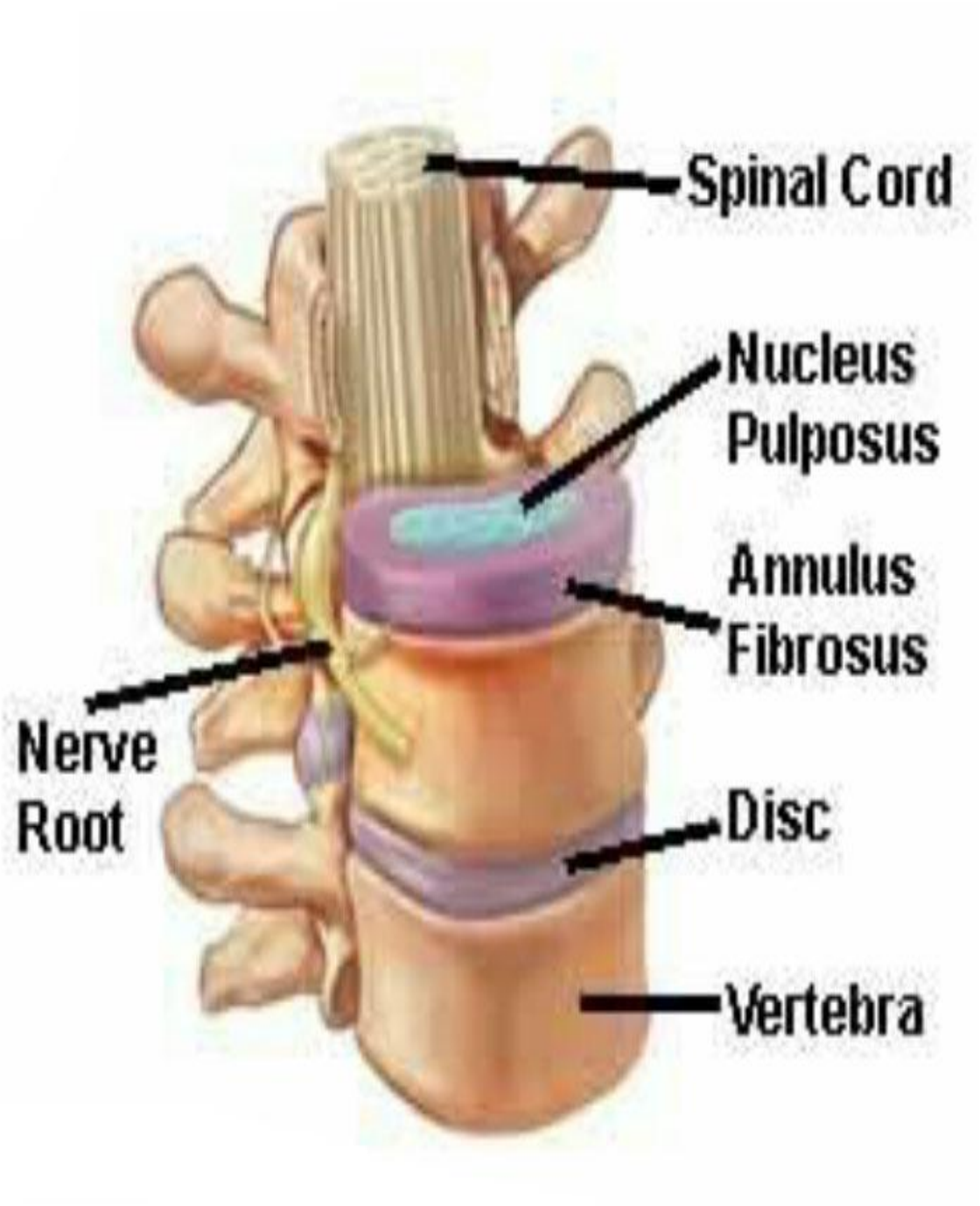


Lateral (Side)
Spinal Column

Posterior (Back)
Spinal Column



ANATOMY OF SPINE



MORDERN ASPECT

INTRODUCTION

The vertebral column is also called the spine, the spinal column or back bone. It is the central axis of the body. It supports the body weight and transmits it to the ground through the lower limbs.

The vertebral column is made up of 33 vertebrae.

Cervical	-	7
Thoracic	-	12
Lumbar	-	5
Sacral	-	5
Coccygeal	-	4

In the thoracic, lumbar and sacral region the number of vertebrae corresponds to the spinal nerve, each nerve lying below the corresponding vertebra. In the cervical region there are eight nerves the upper seven lying above the corresponding vertebrae and eighth below the seventh vertebra. In the coccygeal region there is only coccygeal nerve.

The length of the spine is about 70 cm in Males and 60 cm in Females.

The Intervertebral discs contribute one fifth of the length of the vertebral column.

CURVATURES OF THE VERTEBRAL COLUMN

IN SAGITTAL PLANE:

1. **Primary curves** are present at birth and due to the shape of the vertebral bodies. The primary curves are thoracic and sacral both of which are concave forwards.
2. **Secondary curves** are postural and are mainly due to the shape of the intervertebral disc. The secondary or compensatory curves are cervical and lumbar both of which are convex forwards. The cervical curve appear during

four to five months after birth when the infant starts supporting its head. The lumbar curve appears during twelve to eighteen months when the child assumes the upright posture.

IN CORONAL PLANE (LATERAL CURVE):

There is slight lateral curve in the thoracic region with its concavity towards the left. It is possible due to the greater use of the right upper limb and the pressure of the aorta.

INTERVERTEBRAL JOINTS:

Adjoining vertebrae are connected to each other at three joints. There is a median joint between the vertebral bodies and two joints right and left between the articular processes.

The joints between the articular processes are plane synovial joints.

The joint between the vertebral bodies is a symphysis. The surfaces of the vertebral bodies are lined by thin layers of hyaline cartilage. Between these layers of hyaline cartilage there is a thick plate of fibrocartilage which is called the intervertebral disc.

INTERVERTEBRAL DISCS:

These are fibrocartilaginous discs which intervene between the bodies of adjacent vertebrae and bind them together. Their shape corresponds to that of the vertebral bodies between which they are placed. The thickness of the disc varies in different regions of the vertebral column, and in different parts of the same disc. In the cervical and lumbar regions the discs are thicker in front than behind, while in the thoracic region they are of uniform thickness. The discs are thinnest in the upper thoracic region and thickest in the lumbar region.

The discs contribute about one – fifth of the length of the vertebral column. The contribution is greater in the cervical and lumbar regions than in the thoracic region.

Each disc is made up of the following two parts:

1. **Nucleus Pulposus** is the central part of the disc. It is soft and gelatinous at birth. It is kept under tension and acts as a hydraulic shock absorber. With advancing age the elasticity of the disc is much reduced.

2. **Annulus Fibrosus** forms the peripheral part of the disc. It is made up of a narrower outer zone of collagenous fibres and a wider inner zone of fibrocartilage. The fibres from laminae that are arranged in the form of incomplete rings. The rings are connected by strong fibrous bands. The outer collagenous fibres blend with the anterior and posterior longitudinal ligaments.

LIGAMENTS OF VERTEBRAL COLUMN:

Apart from the intervertebral discs and the capsules around the joints between the articular processes, adjacent vertebrae are connected by several ligaments which are as follows

1. Anterior longitudinal ligament
2. Posterior longitudinal ligament
3. Intertransverse ligaments
4. Interspinous ligaments
5. Supraspinous ligaments
6. Ligamentum flava

MOVEMENTS OF VERTEBRAL COLUMN:

The movements are those of

1. Flexion
2. Extension
3. Lateral Flexion
4. Rotation

Flexion and Extension occur freely in the cervical and lumbar region, But not in the thoracic region. Rotation is free in the thoracic region and restricted in the lumbar and cervical region.

FUNCTIONS:

- ❖ Inter vertebral discs give shape to the vertebral column.
- ❖ They act as a remarkable series of shock absorbers or buffers.
- ❖ Because of their elasticity they allow slight movement of vertebral bodies on each other, more so in the cervical and lumbar regions.
- ❖ When the slight movements at individual discs are added together they become considerable.

LUMBAR VERTEBRAE:

5 in number which occupy the region of loin.

Distinguishing Points:

- Big size of body.
- Absence of costal facets on body.
- Absence of foramen transversarium.

Only 5th lumbar vertebra presents some special features. The rest are known as Typical Lumbar Vertebrae.

TYPICAL LUMBAR VERTEBRAE:

- ❖ Body is large in size deeper in front and behind. Transverse measurement is more than antero-posterior measurement.
- ❖ Vertebral Foramen is triangular in shape.
- ❖ Pedicles are short and strong.
- ❖ Laminae is short, strong and broad. It gives attachment to ligamentum flava.
- ❖ Spine is Quadrangular in shape.
- ❖ Superior articular processes - its articular facets are slightly concave and face backwards and medially.
- ❖ Inferior articular processes - its articular facets are slightly convex and face forwards and laterally.

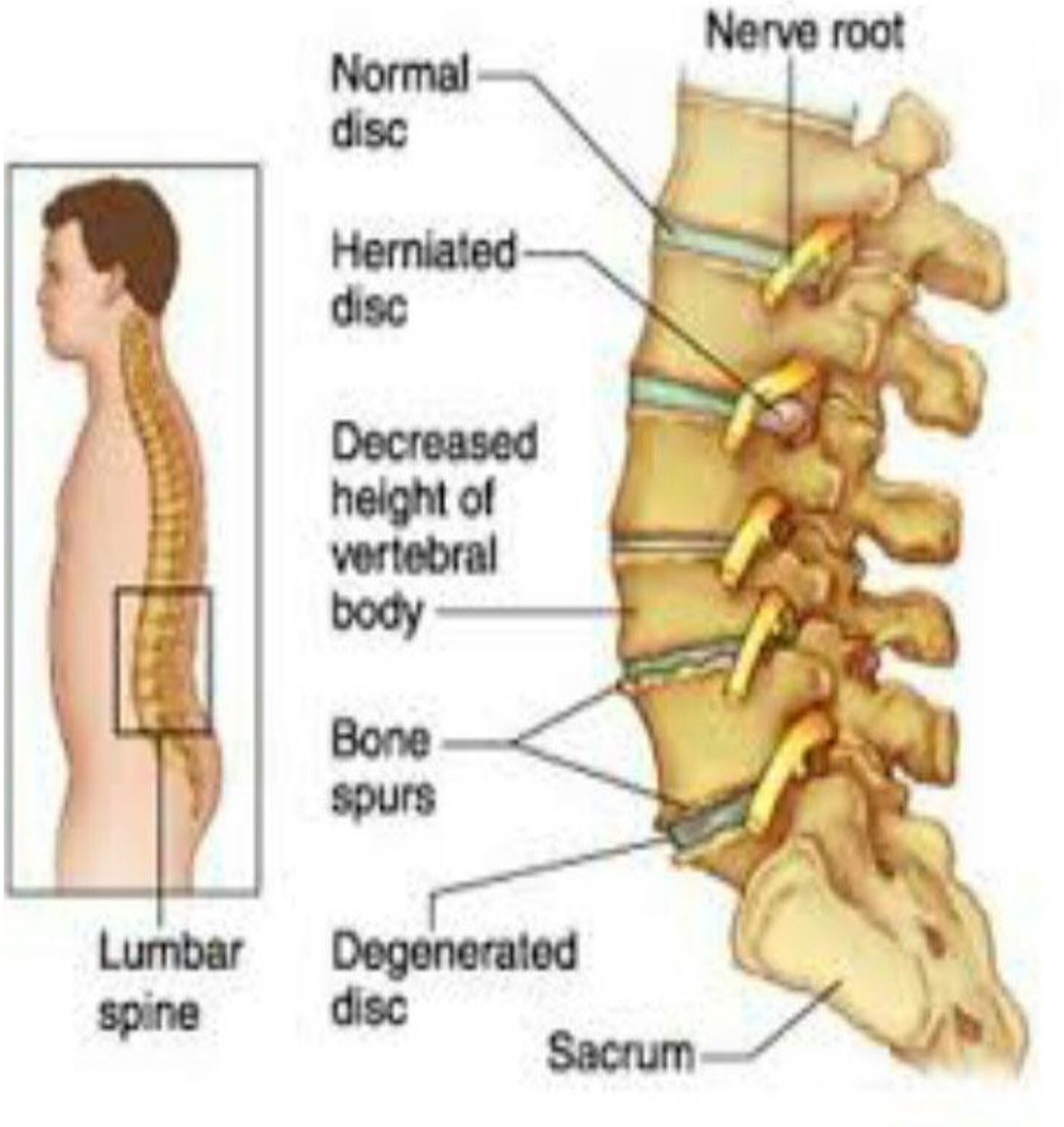
FIFTH LUMBAR VERTEBRAE:

- ✓ Body is very large and its anterior part is thicker than posterior part.
- ✓ Spine is small in size. Its upper border is rounded and down turned at its dorsal part.
- ✓ Transverse process is massive and stout. It arises mainly from the pedicle and encroaches on to the body.

BLOOD SUPPLY OF THE VERTEBRAL COLUMN:

The segmental arteries supply the vertebral and the longitudinal muscles attached to them. The lumbar artery gives multiple small branches to the vertebral bodies. In thoracic and lumbar regions, the muscles receive posterior branches of the intercostal, lumbar and the sacral arteries.

SPINE PROBLEMS



LUMBAR SPONDYLOSIS

Lumbar spondylosis is one of the most Common Problem faced by most of the people in their day to life.

DEFINITION:

Spondylosis of the lumbar spine means degenerative changes such as osteoarthritis of the vertebral joints and degenerating Inter vertebral discs, (Degenerative disc disease) in the low back.

Lumbar - Low Back Region

Spondylo - Vertebra

Osis - Condition

It means pathological condition of lumbar vertebrae.

EPIDEMIOLOGY:

Lumbar Spondylosis seen in 85.5% of Population.

Disc protrusions affected in 80%

Degenerative spinal stenosis affected in 20%.

AGE:

About 20 Years, 27-37% of Peoples were affected.

At the age between 20-29 Years, 10% of Peoples were affected.

At the age between 40-50 Years, 80% of Peoples were affected.

GENDER:

Men 84%

Women 74% are affected in lumbar spondylosis

LOCATION:

Lumbar vertebrae is most frequently affected at the level of L_4 –S_1 levels.

AETIOLOGY:

Aetiology for this disorder was explained below

Degenerative Causes:

There are primary and secondary causes

a.Primary causes:

- Genetic Factors
- Manual Labour
- Metabolic Factors
- Senility
- Vicious attitude

b.Secondary causes:

- Osteo arthritis
- Rheumatoid arthritis
- Metastatic carcinoma
- Lymphoma of Spine
- TB Spine
- Road accidents
- Accidental Injury
- Old Lumbar Fracture

c. Occupational causes.

d. Hereditary Factors.

- Congenital narrowing of the cervical spinal canal (myelopathty is often seen when canal's sagital diameter is 12mm or less).
- Segemental defects – Hemi vertebra, Fused Vertebra.

e. Past spine surgery

f. obesity

g. smoking – decreases water content in disc

l) Acquired narrowing of lumbar spinal canal due to

- ❖ Osteophytes
- ❖ Sacralisation of L5 vertebrae
- ❖ Ossified posterior longitudinal ligament (OPLL)
- ❖ Facet joint hypertrophy (results foraminal stenosis & compression of root of radicular artery)
- ❖ Hypertrophied ligamentum flavum (Compress the cord during extension)

PATHOGENESIS:

Lumbar Spondylosis is a degenerative disorder that may cause loss of normal structure and function. Although aging is the primary cause, the location and rate of degeneration is individual.

Spondylosis is most commonly found in lowers spine because that is the area of the spine that endures the most wear and tear. The lumbar spine holds the majority of the body's weight and is responsible for providing support and stability.

The spine is made up of several vertebrae stacked on top of each other. A vertebrae is small bone that builds the core structure of spine. On either side of a vertebrae is a disc and Joint, both made of soft tissue and sponge like texture to allow the vertebra to bend and move.

Over time, as the spine undergoes years of repetitive motion, heavy lifting, and possible weight gain, the vertebrae of the lumbar spine become compressed and push in to the discs and joints from both sides, much like a clamp. This constant pressure can cause the discs and joints to gradually deteriorate and possibly develop other spine conditions, such as

- Spinal canal stenosis,
- Spondylolisthesis,
- Herniated disc,
- Disc bulge,

- Degenerative disc disease,
- Bone spurs.

This is particularly true in the L_5-S_1 vertebra because that holds the most weight and stability of the body.

Another main cause of lumbar spondylosis is arthritis of the spine. Typically, Arthritis of the spine develops later in life and contributes to the gradual degeneration of the components of the spine. This also could lead to the development of other spine conditions, such as bone spurs.

Lumbar spondylosis is caused by degenerative changes within the intervertebral discs. The soft, elastic material dries out and loses height. Thickening of the ligaments that surround the disc occurs. These other ligaments undergo further degenerative changes, thickening and potential calcification. Movement stimulates pain fibres in the annulus fibrosus and facet joints. Sittting for prolonged periods of time may cause pain and other symptoms due to pressure on the lumbar vertebrae. Repititive movements such as lifting and bending (eg. Manual labor) may increase pain.

Intervertebral discs as people age, certain biochemical changes occur affecting tissue found throughout the body. In the spine, the structure of intervertebral discs (Annulus fibrosus, Lamellae, Nucleus Pulposus) may be compromised. The annulus fibrosus (eg.Tire-like) is composed of 60 or more concentric bands of the collagen fiber termed lamellae. The nucleus pulposus is a gel like substance inside the intervertebral discs encased by annulus fibrosus. Collagen fibers form the nucleus along with water and proteoglycans.

The degenerative effects of aging can weaken the annulus fibrosus structure, causing the “Tire tread” to wear or tear. The water content of the nucleus decreases with age affecting its ability to rebound following compression (eg. Shock absorbing quality). The structural alterations from degeneration may decrease disc height and increase the risk for disc herniation.

PATHOPHYSIOLOGY:

Intervertebral discs are believed to undergo a "degenerative cascade" of three overlapping phases.

- Phase I - Dysfunction Phase
- Phase II - Instability Phase
- Phase III - Stabilization Phase

Phase I - Dysfunction Phase:

- Seen between 15 to 45 years of age
- Circumferential and radial tear seen in the disc annulus
- Localized synovitis of the facet joints is seen

Phase II - Instability Phase:

- Seen between 35 to 70 years of age
- There is internal disruption of the disc
- Progressive disc resorbtion takes place
- Degenerative of facet joint with lax capsules, subluxation and joint erosions are seen.

Phase III - Stabilization Phase:

- Seen over 60 years of age.
- Progressive development of hypertrophic bone above the disc and facet joints leading to segmental stiffening or frank ankylosis is seen.

SYMPTOMS OF LUMBAR SPONDYLOSIS:

Specific conditions that fall under the umbrella term of lumbar spondylosis can include herniated discs, bulging discs, bone spurs and osteoarthritis, all of which are spinal abnormalities that run the risk of protruding into the spinal canal and exerting pressure on spinal nerves. The sciatic nerve is often compressed at the meeting of the L_5 and S_1 vertebrae. Common symptoms of sciatic nerve compression include tingling, numbness, weakness and pain that can spread through the following areas:

- Lower back
- Radiating pain towards the lower extremities
- Diffuse tenderness in lumbar bone with limitation of movements
- Stiffness of lumbar spine

- Exacerbation of pain on movements
- Pain increased on forward bending, sneezing, coughing
- Paraesthesia & sensory loss on affected area
- Burning and tingling sensation in lower limb
- Pain and stiffness in low back in the morning hours

Less Common Symptoms:

- Loss of balance
- Neurogenic bladder.

Common clinical syndromes associated with lumbar spondylosis include the following:

1. LOW BACK ACHE:

- It's occurs common in second to fifth decade, disc disease and disc herniation occur in 3rd and 4th decade
- Symptoms of low back pain, radiating to the buttocks and reduced by rest and in squatting position
- Pain Increased while bending forward and sitting, weight lifting, coughing etc.,

2. RADICULOPATHY:

- Sciatica – Pain in supply of sciatic nerve and is regularly due to disc herniation
- It is evidenced by the leg pain, equal to or more than the back pain
- Pain radiating to lower extremities.

3. NERVE ROOT COMPRESSION:

- About 95% of disc prolapse takes place through L_4 - L_5 region compressing L_5 nerve root.
- The other disc prolapse take place through L_3 – L_4 and L_5 - S_1, L_4 and S_1 respectively.

EXAMINATION:

The examination of the lumbar spondylosis is explained below

1. INSPECTION:

Congenital are pathological skeletal deformities like scoliosis, lordosis or kyphosis.

2. PALPATION:

a) TENDERNESS:

- ❖ Scatter tenderness over the low back.
- ❖ Localized tender infilterates of the skin and subcutaneous tissue
- ❖ Palpable tender induration of small intervertebral muscles
- ❖ Tenderness at the level of posterior articulation and pain on percussion of affected intervertebral space.

b) MOVEMENTS:

Movement of the spine

i) To test flexion:

Instruct the patient to bend forwards as much as possible at the waist. Normal flexion is 80^0 or finger tips 3-4 inches from the floor.

ii) Lateral Flexion:

Instruct the patient to bend to the left and to the right as far as possible. Normal range is 35^0 on each side.

iii) Extension:

Instructs the patient to bend at waist as far backward as possible Normal range is 20^0-30^0.

iv) Rotation:

Instructs the patient to rotate from the waist to the left and to the right as far as possible. Normal range is 45^0 possible.

All the movements of the spine are tested and found to be controlled in all direction.

3. CLINICAL SIGNS:

- Straight leg raising test (SLR)
- Braggard's test

- Femoral nerve stretch test
- Schober's test
- Forward bending to touch the toes
- Flip test
- Lassegue test
- Bowstring sign

DIAGNOSIS:

1. Plain X-ray of Lumbar spine – AP and Lateral views show- altered lordosis.

- ❖ AP view shows any deviation in the longitudinal axis of the vertebral column, narrowing disc space
- ❖ Lateral view shows size and shape of the lumbar vertebras, Degeneration in facet and uncoverable joints and osteophyte formation
- ❖ Oblique view shows angulation in body of the vertebrae.

2. Magnetic Resonance Imaging (MRI):

It shows

- ❖ Any disc degernation in spine
- ❖ Neural compression
- ❖ Detect any intra- spinal lesion

3. Computerized Tomography (C.T Scan):

It

- ❖ Confirms the degenerative changes
- ❖ Detect the foraminal structures and lateral disc prolapse
- ❖ Estimate diameter of the vertebral canal segmentally
- ❖ May demonstrate disc herniation and posterior osteophytes

4. Myelogram:

Helping in detecting

- ❖ Intra spinal lesion
- ❖ Spinal stenosis
- ❖ Any compression of the spinal cord

5. Other Tests:

- ❖ Disco graphy
- ❖ Nerve conduction studies
- ❖ EMG

DIFFERENTIAL DIAGNOSIS:

- ❖ Osteoporosis
- ❖ Multiple myelomas
- ❖ Multiple sclerosis
- ❖ Extra dural tumour
- ❖ Ankylosis spondylosis
- ❖ Spino vascular insufficiency
- ❖ Peripheral neuropathy
- ❖ Herpes zoster
- ❖ TB Spine
- ❖ Rheumatoid arthiritis
- ❖ SLE
- ❖ Mixed connective tissue disorder.

COMPLICATIONS:

- ❖ Severe spinal canal stenosis
- ❖ Cauda equina syndrome
- ❖ Neurogenic claudication
- ❖ Paraplegia
- ❖ Conus Medullaris Syndrome

DISCS PROBLEMS

Materials & Methods

MATERIALS AND METHODS

The open labeled randomized clinical study on **Thandaga Vatham** was carried out in the post graduate department of pothu maruthuvam, Govt. Siddha medical college palayamkottai. For this clinical study 20 patients of both sex at different age groups suffering from **Thandaga Vatham** were selected in the out patients and the other 20 as Inpatients. After discharge Some Inpatients are followed by out patient for further management.

SELECTION OF PATIENTS:

INCLUSION CRITERIA:

- Age: 20-60 yrs.
- Sex : Both male and female
- Patients having symptoms of Pain in the low back area, radiating pain to buttocks and lower limbs, stiffness present in low back area, Exacerbation of pain on movements, Pain increased on forward bending, Tingling sensation.
- Patients who are willing to give radiological investigation and provide blood for lab investigation.
- Patient willing to sign the informed consent stating that he/she will conscientiously stick to the treatment during 30 days but can opt out of the trial of his/her own conscious discretion.
- Patients complaining of back pain functional scale score should be range from below 30.

EXCLUSION CRITERIA:

- Systemic Hypertension
- Diabetes mellitus
- Cardiac disease
- Auto immune diseases like Rheumatoid arthritis, SLE, Psoriasis, Mixed connective tissue disorder.
- Spina bifida
- Liver Disease

- Pregnancy and lactation
- Osteo myelitis
- Renal Disease
- Tuberculosis in spine
- Patient with any other serious illness

For this clinical study detailed history is taken from the patient, these are as follows

1. Trauma
2. Occupation
3. Family history
4. Diet
5. Economical status
6. Personal history

DIAGNOSIS:

- **Clinical assessment:**

  The diagnosis was made by clinical symptoms are correlated with lumbar spondylosis.

- **Siddha assessment:**

  Poriyal aridhal,
  Pulanal aridhal,
  Vinathal,
  Udal thathuklal,
  Uyir thatukal

- **laboratory investigations:**

  Blood:

  - TC
  - DC

- ESR
- Hb
- Blood Urea
- Serum Creatinine
- Serum Cholesterol
- Blood Sugar
    - Fasting
    - Post Prandial
    - Random

Urine:

- ✓ Albumin
- ✓ Sugar
- ✓ Deposits

- ➢ Radiological assessment

Xary lumbar spine

- ✓ AP view
- ✓ Lateral view

ASSESMENT OF RESULTS

The results were assessed on the basis of symptomatic relief and back pain functional scale. According to this pain scale the questionnaire is filled by the patient's co-operation.

The Back Pain Function Scale (BPFS) of Stratford et al Over view:

Stratford et al developed the Back Pain Function Scale (BPFS) to evaluation functional ability in patients with back pain. The authors are from McMaster University Appalachian Physical Therapy (Georgia) and Virginia Commonwealth University.

Measures:

(1) Any of your usual work housework or school activities

(2) Your usual hobbies recreational or sporting activities

(3) Performing heavy activities around your home

(4) Bending or stooping

(5) Putting your shoes or socks (or stockings or pantyhose)

(6) Lifting a box of groceries from the floor

(7) Sleeping

(8) Standing for 1 hour

(9) Walking 1 mile

(10) Going up or down 2 flights of stairs (about 20 steps)

(11) Sitting for 1 hour

(12) Driving for 1 hour

Responses	Points
unable to perform activity	0
extreme difficulty	1
quite a bit of difficulty	2
moderate difficulty	3
a little bit of difficulty	4
no difficulty	5

Total score = SUM (points for all 12 measures)

adjusted total score = (total score) / 60 Interpretation:

• Minimum score: 0

• Maximum score: 60

• Maximum adjusted score: 1 (100%)

• The higher the score the greater the patient's functional ability.

Total Score (Adjusted)	Interpretation
0 (0%)	unable to perform any

	activity
60 (100%)	no difficulty in any activity

References:

Stratford PW Binkley JM et al. Development and initial validation of the Back Pain Functional Scale. Spine. 2000; 25: 2095-2102 (Appendix A page 2101).

The score is below 30 improvement is poor.

The score is 31-50 improvement is moderate.

The score is 51-60 improvement is good.

Treatment:

The clinical trial drug **SAGALAVATHA CHOORANAM** (Internal) 2gm two times after food with water is given for 30 days till the end of the course. The Bio - Chemical analysis was done in the Laboratory of Government Siddha Medical College of Palayamkottai. Pharmacological analysis was done in the laboratory of Periyar College of Pharmaceutical sciences, Trichy.

Results & Observations

RESULT AND OBSERVATIONS

For this open labeled randomized phase II Clinical study totally forty patients (20 OPD+20IPD) were selected. They are treated in Pothu Maruthuvam Department, G.S.M.C. Palayamkottai.

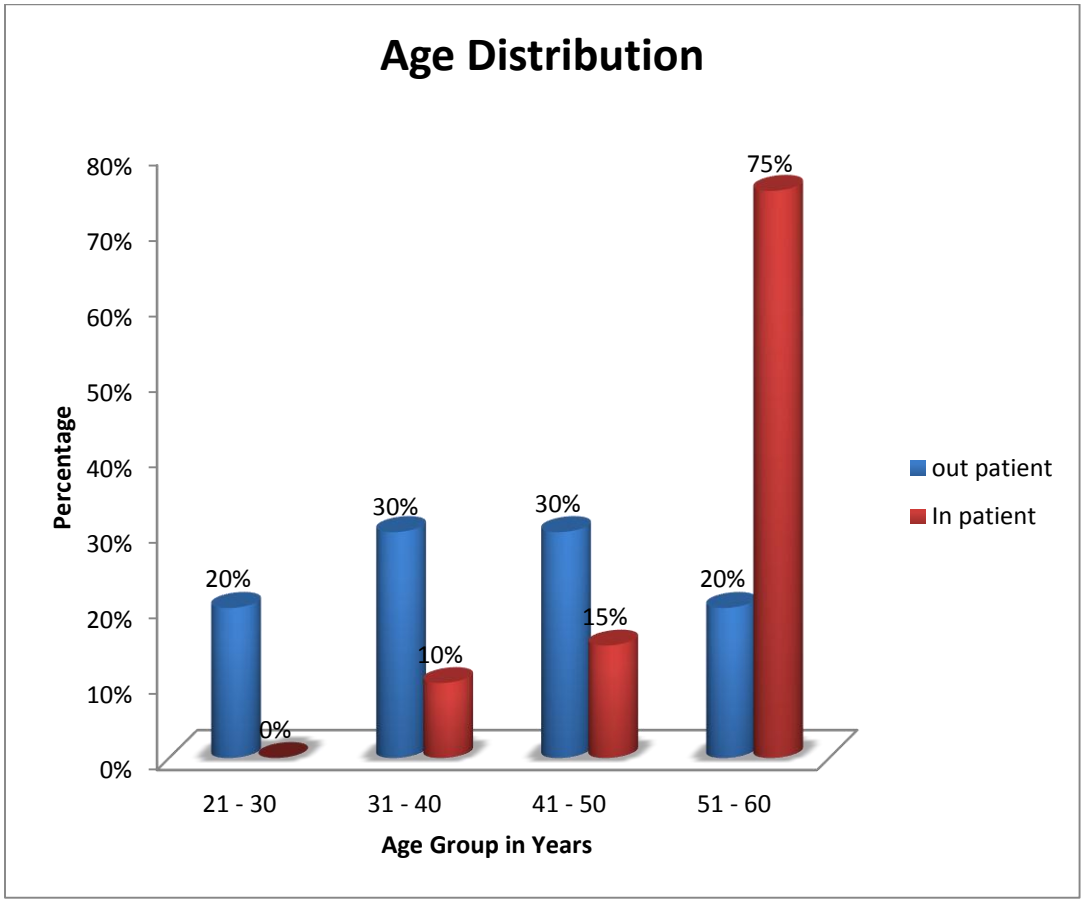
Results were observed with respect to following criteria.

- Age Distribution
- Sex Distribution
- Religion
- Occupational Status
- Socio-Economic Status
- Diet
- Aetiological Factor
- Mode of Onset
- Duration of Illness
- Clinical Manifestation
- Kaalam
- Thegi
- Gunam
- Thinai
- Gnanendrium
- Kanmendrium
- Kosam
- Mukkutram (Vatham, Pitham, Kabham)
- Udal Kattukal
- Envagai Thervugal
- Neerkuri
- Neikuri
- Assessment of Outcome
- Radiological Findings
- Gradation of results

1. Age Distribution:

Table–1–Illustrates the age distribution and its percentage.

SL. No.	Age Group in Years	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	21-30	4	20	-	0
2	31-40	6	30	2	10
3	41-50	6	30	3	15
4	51-60	4	20	15	75



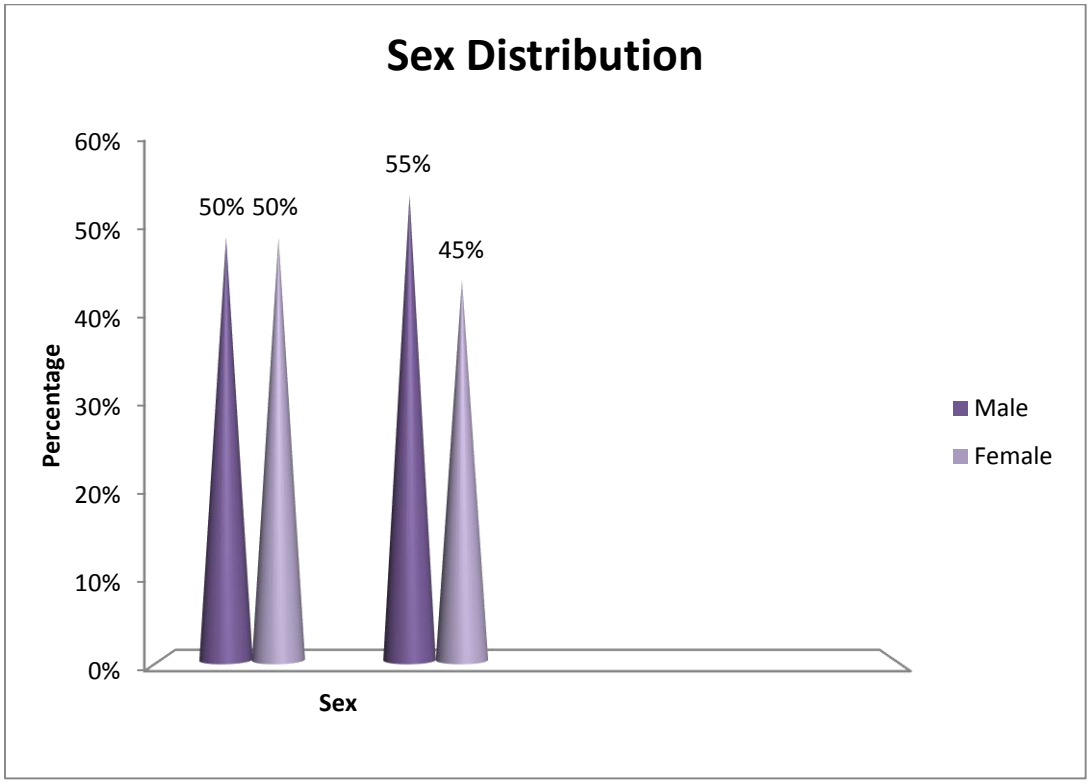
Inference:

Among 40 cases the prevalence of the disease was found to be higher in the age group 51-60.

2. Sex Distribution:

Table -2-Illustrates the sex distribution and its percentage.

SL. No	Sex	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Male	10	50	11	55
2	Female	10	50	9	45



Among 20 out patients:

50 % of both Males and Females were affected

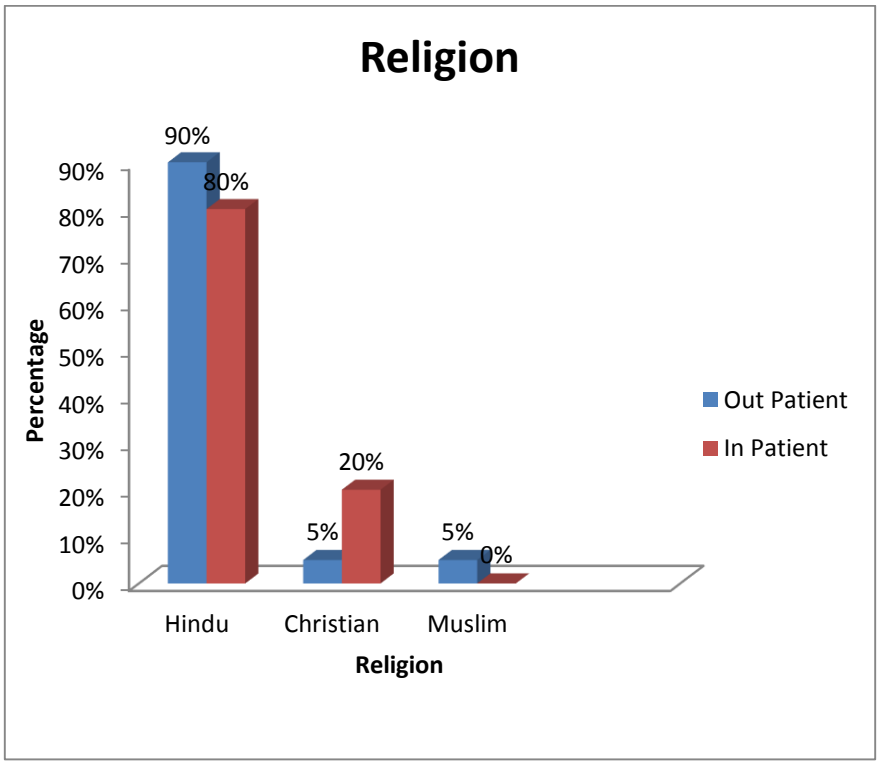
Among 20 In patients:

55% of Males and 45% of Females were affected.

3. Religion Distribution:

Table – 3- Illustrates the religion distribution and its percentage.

SL. No.	Religion	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Hindu	18	90	16	80
2	Christian	1	5	4	20
3	Muslim	1	5	-	0



Among 20 out patients:

90 % of cases were Hindus, 5% of cases were both Muslim and Christians.

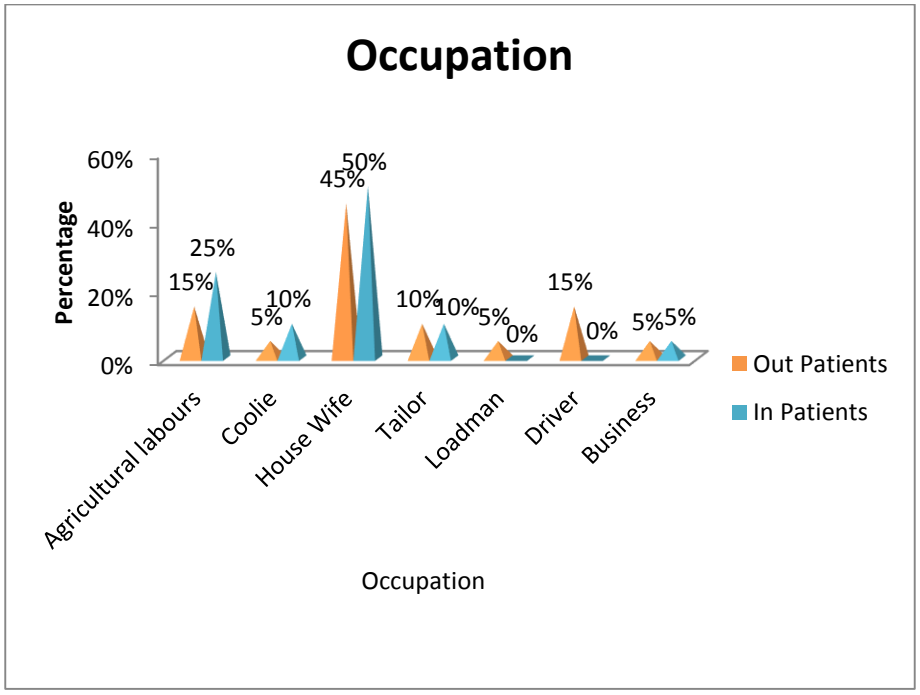
Among 20 In patients:

80 % of cases were Hindus, 20% of cases were Christians.

4. Occupation:

Table -4-Illustrates the Occupation and its percentage.

SL. No.	Occupation	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Agricultural labours	3	15	5	25
2	Coolie	1	5	2	10
3	House Wife	9	45	10	50
4	Tailor	2	10	2	10
5	Loadman	1	5	-	0
6	Driver	3	15	-	0
7	Business	1	5	1	5



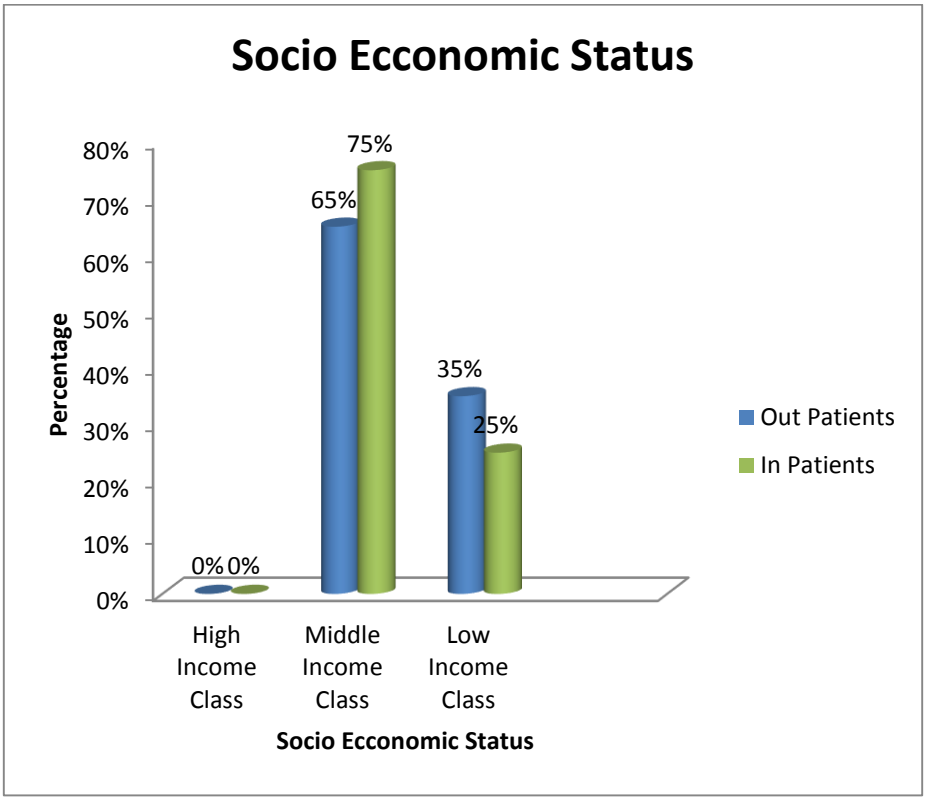
Inference:

Among 40 cases the prevalence of the disease was found to be higher in house wife's.

5. Socio Economic Status:

Table 5- Illustrates the Socio Economic Status and its percentage.

SL. No.	Socio Economic Status	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	High Income Class	-	0	-	0
2	Middle Income Class	13	65	15	75
3	Low income Class	7	35	5	25



Among 20 out patients:

65% of cases were Middle Income class and 35% of cases were Low Income class.

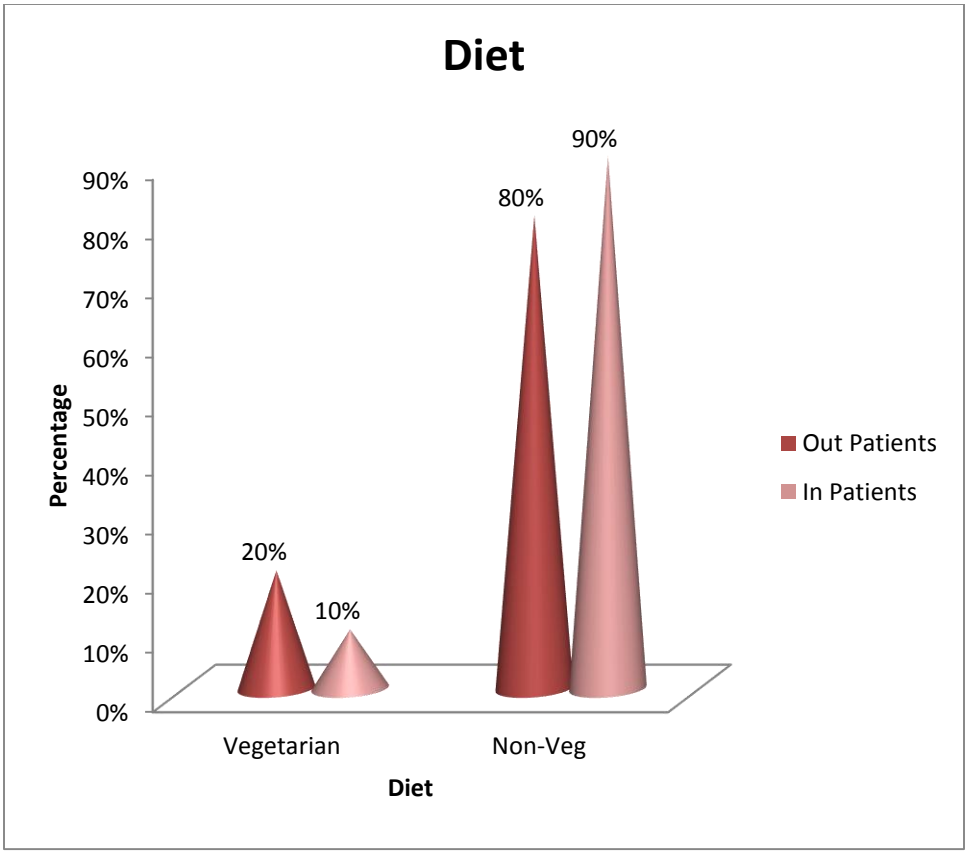
Among 20 In patients:

75% of cases were Middle Income class and 25% of cases were Low Income class.

6. Diet:

Table -6-Illustrates the diet distribution and its percentage.

SL. No.	Diet	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Vegetarian	4	20	2	10
2	Non-Veg	16	80	18	90



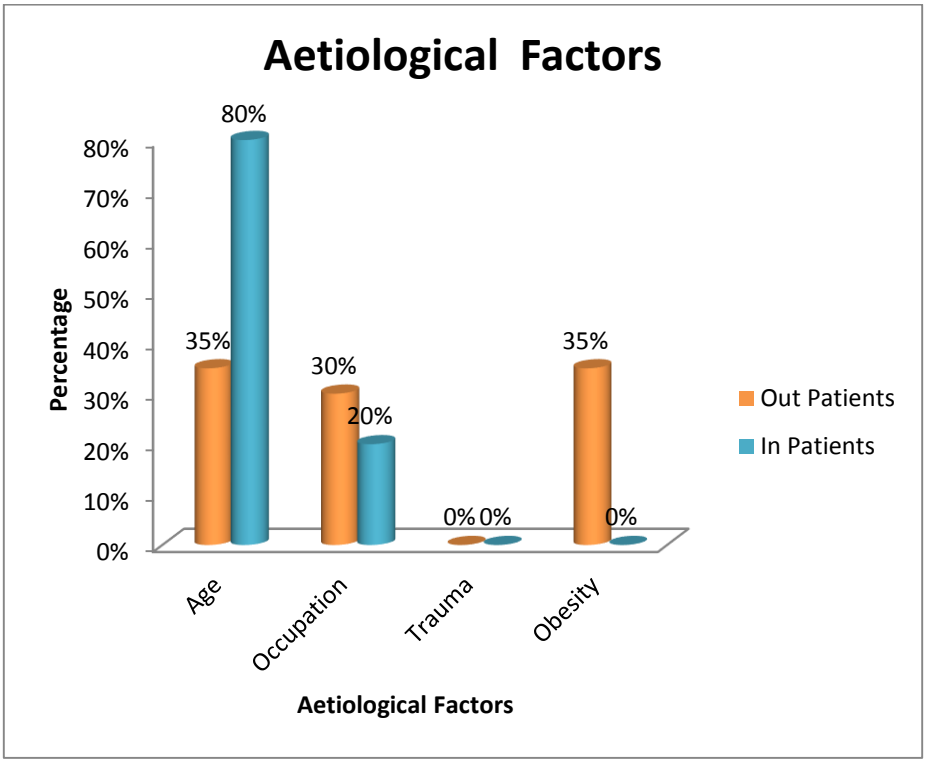
Inference:

Among 40 patients the prevalence of the disease was higher to be found in Non vegetarian.

7. Aetiological factors:

Table-7-Illustrates the aetiological factors and its percentage.

SL. No.	Aetiological factors	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Age	7	35	16	80
2	Occupation	6	30	4	20
3	Trauma	-	0	-	0
4	Obesity	7	35	-	0



Among 20 out patients:

Aetiological factors of the disease due to age 35%, occupation and obesity 35% were observed.

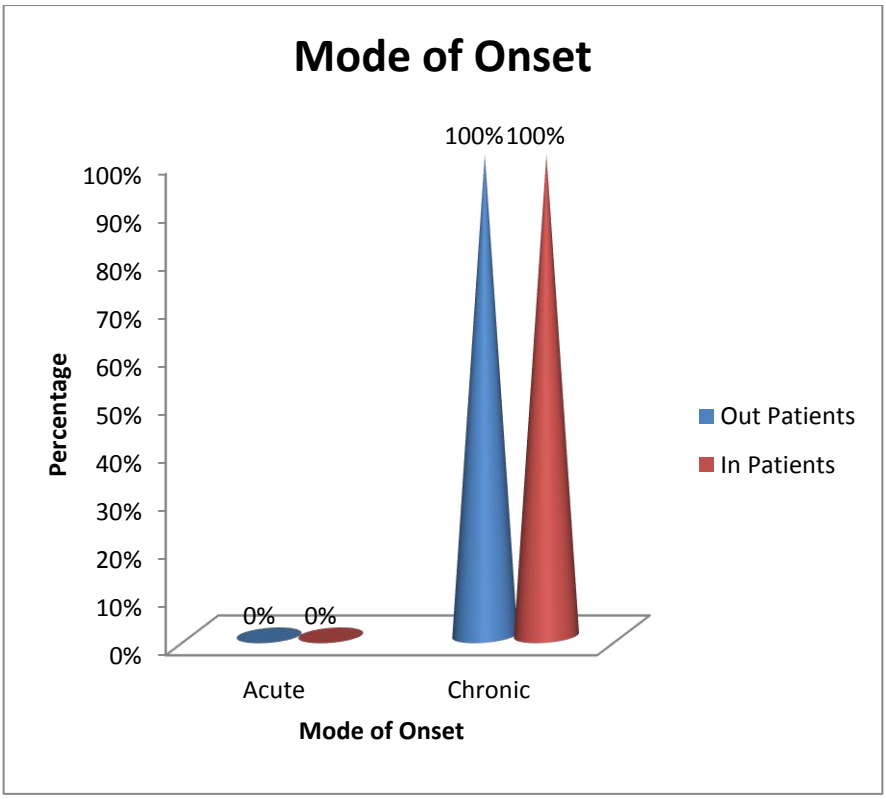
Among 20 In patients:

Aetiological factors of the disease due to age 80%, occupation 20% were observed

8. Mode of Onset:

Table – 8 – Illustrates the Mode Onset and its Percentage.

SL. No.	Mode of Onset	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Acute	-	-	-	0
2	Chronic	20	100	20	100



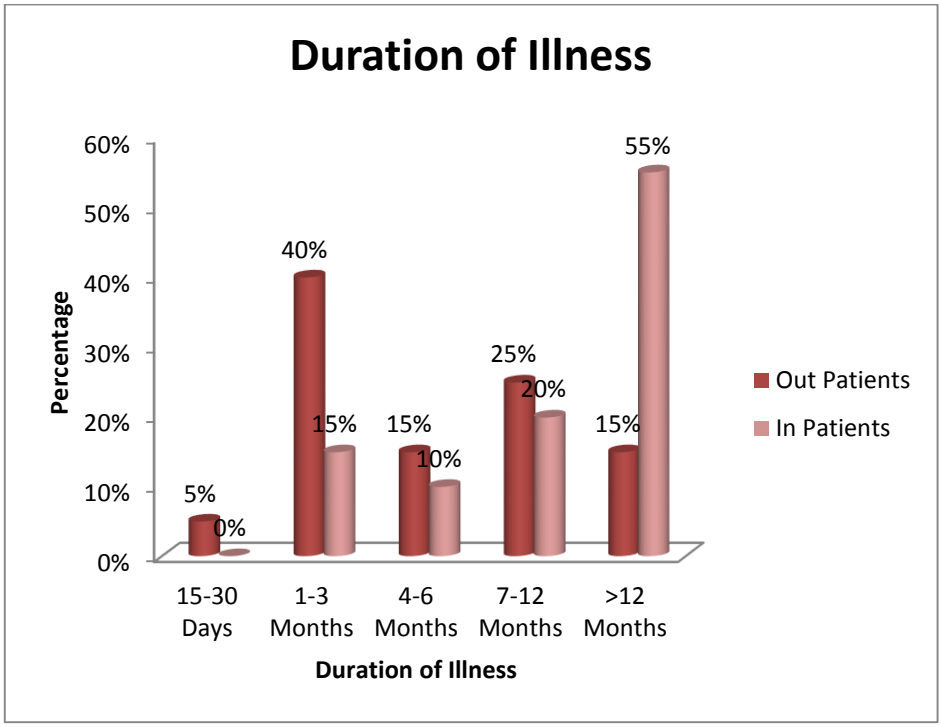
Inference:

All the patients were observed in chronic state.

9. Duration of Illness:

Table – 9 –Illustrates Duration of Illness and its Percentage.

SL. No.	DurationofIllness	OutPatients(OP)		InPatients(IP)	
		No.of Cases	Percentage	No.of cases	Percentage
1.	15-30Days	1	5	-	0
2.	1-3Months	8	40	3	15
3.	4-6Months	3	15	2	10
4.	7-12Months	5	25	4	20
5.	>12Months	3	15	11	55



Among 20 out patients:

Duration of illness 5% in 15 to 30 days 40% in 1-3 months, 25 % in 7-12 months and 15 % of both 4-6 months and above 12 months were observed.

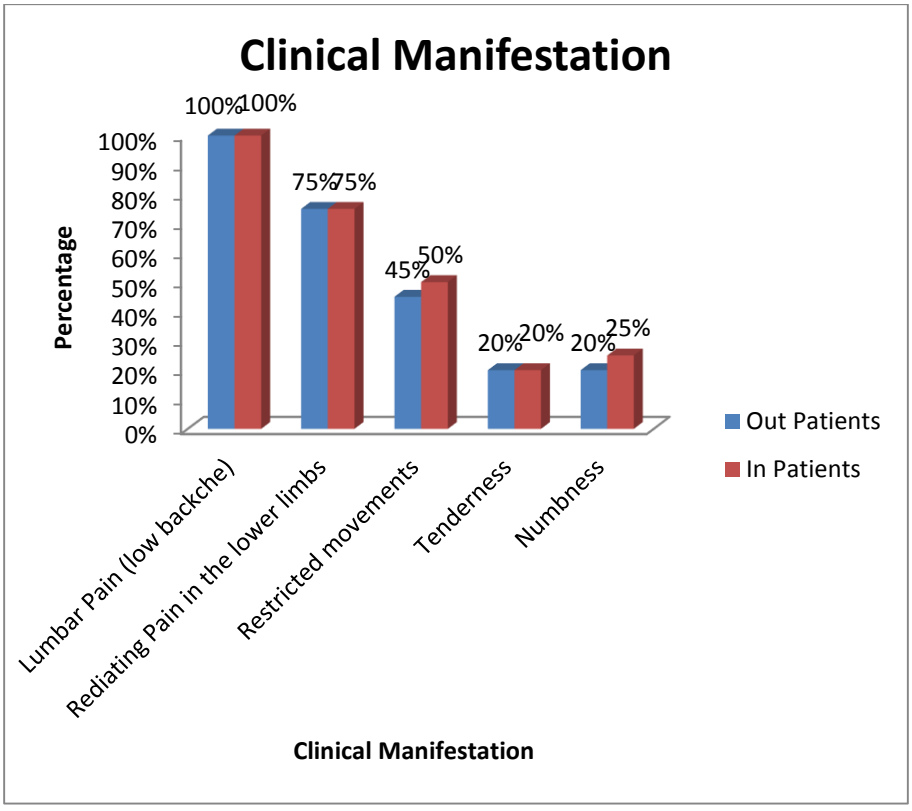
Among 20 In patients:

Duration of illness 15% in 1-3 months, 10% in 4-6 months, 20 % in 7-12 months and 55% in above 12 months were observed.

10. Clinical Manifestation:

Table -10- Illustrates Clinical Manifestation and its percentage.

SL. No.	Clinical Manifestation	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Lumbar Pain (low backache)	20	100	20	100
2	Rediating pain in the lower limbs	15	75	15	75
3	Restricted movements	9	45	10	50
4	Tenderness	4	20	4	20
5	Numbness	4	20	5	25



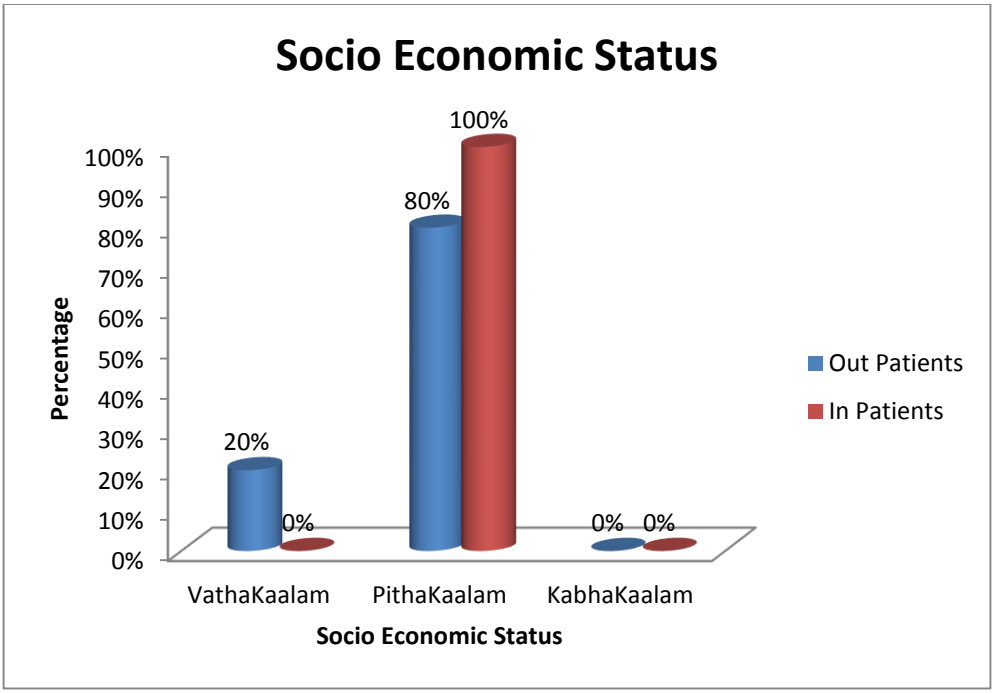
Inference:

Among 40 cases low back pain is found in 100% and Radiating pain is found in 75%

11. Kaalam:

Table – 11- Illustrates Kaalam and its percentage.

SL. No.	Kaalam	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Vathakaalam	4	20	-	0
2	Pithakaalam	16	80	20	100
3	Kabhakaalam	-	-	-	0



Inference:

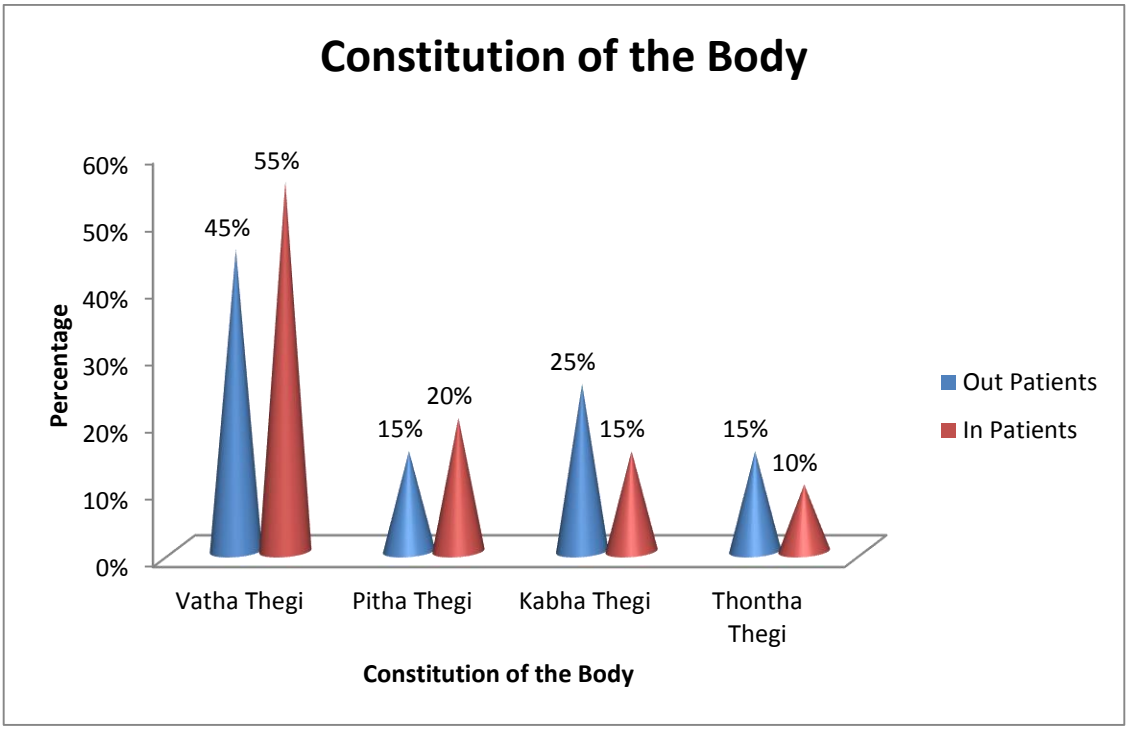
Among 40 cases Most of the patients were affected in pitha kalam (80% of OP & 100% of IP)

Remaining 20 % were affected vatha kalam in OP cases.

12. Constitution of the Body:

Table – 12 – Illustrates Constitution of the body and its percentage.

SL. No.	Constistution of The Body	OutPatients(OP)		InPatients(IP)	
		No.ofCases	Percentage	No.ofcases	Percentage
1.	VathaThegi	9	45	11	55
2.	PithaThegi	3	15	4	20
3.	KabhaThegi	5	25	3	15
4.	ThonthaThegi	3	15	2	10



Among 20 Out patients:

45% under Vatha thegi 15 % under Pitha thegi, 25% under Kabha thegi, 15% under Thontha thegi.

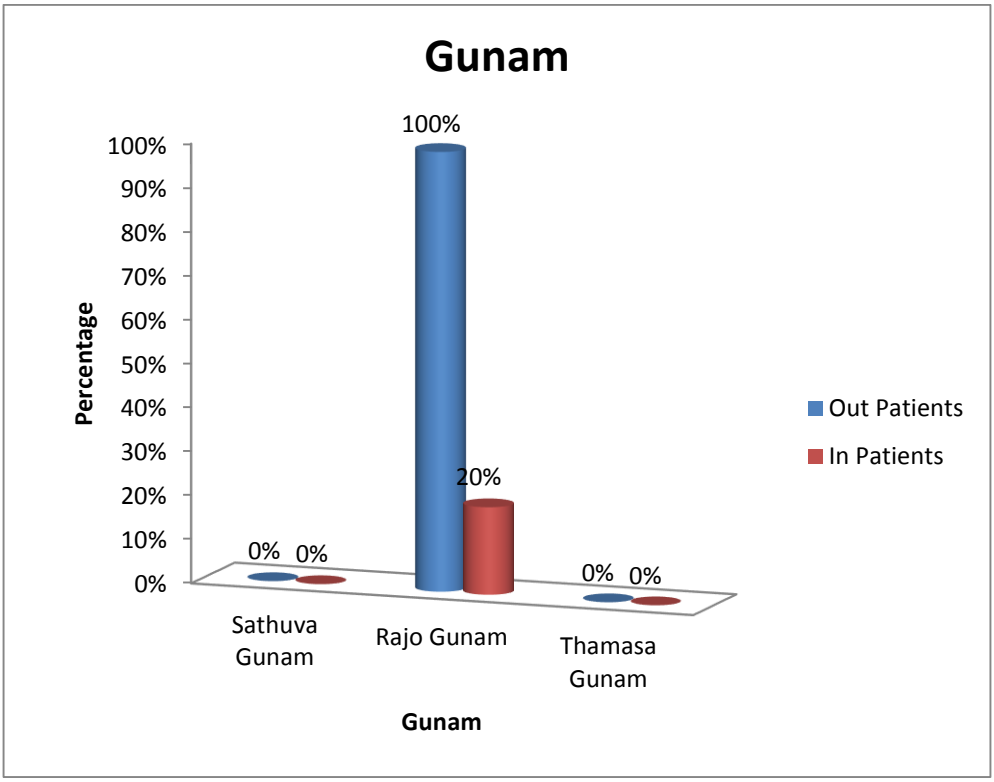
Among 20 In patients:

55% under Vatha thegi, 20 % under Pitha thegi, 15% under Kabha thegi, 10% under Thontha thegi

13. Gunam:

Table-13- Illustrates the Gunam and its percentage.

SL. No.	Gunam	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Sathuva gunam	-	-	-	-
2	Rajo gunam	20	100%	20	100%
3	Thamasa gunam	-	-	-	-



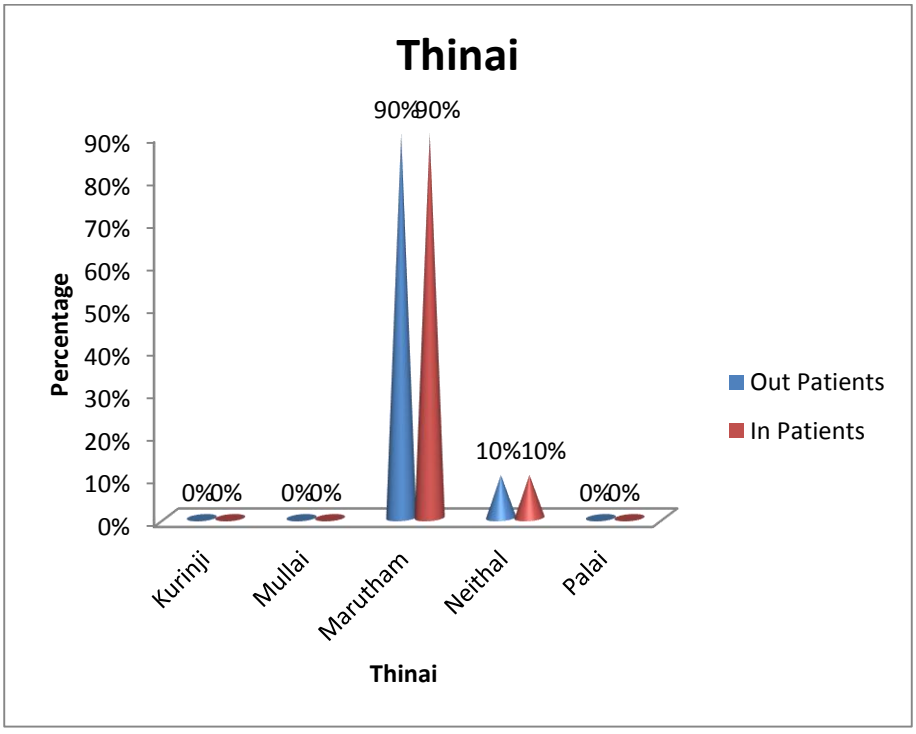
Inference:

Among 40 cases Rajo gunam was affected in 100% of both IP and OP cases were observed.

14. Thinai:

Table 14- Illustrates the Thinai and its percentage.

SL.No.	Thinai	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Kurinji	-	-	-	-
2	Mullai	-	-	-	-
3	Marutham	18	90	18	90
4	Neithal	2	10	2	10
5	Palai	-	-	-	-



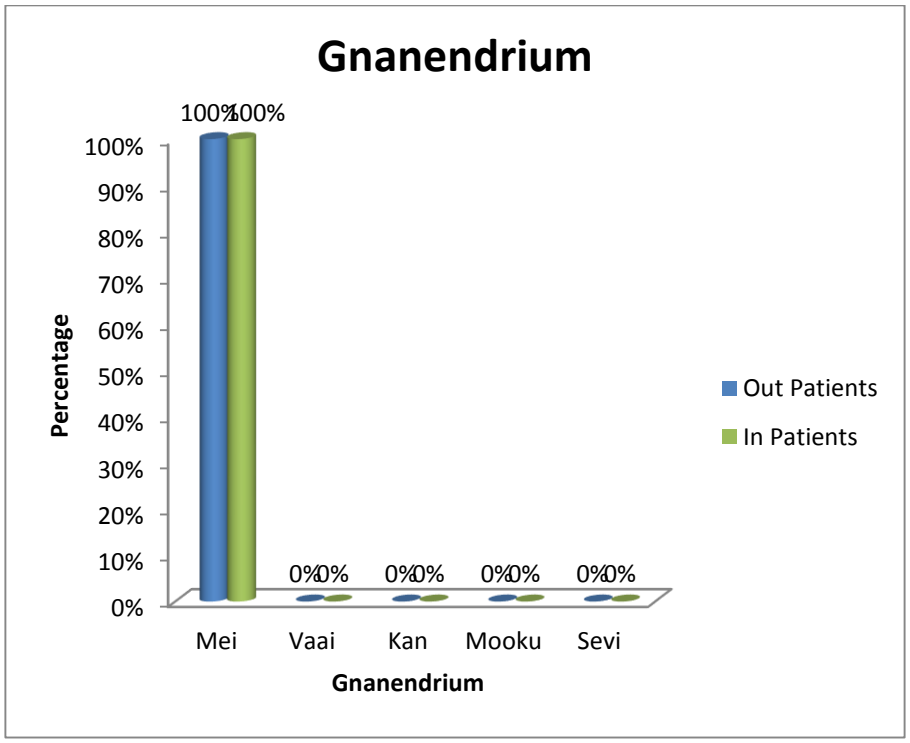
INFERENCE:

Among 40 patients 90% of both IP and OP cases were reported from Marutham and 10 % of cases were reported from Neithal

15. Gnanendrium:

Table 15- Illustrates the Gnanendrium and its percentage.

SL. No.	Gnanendrium	Out Patients (OP)		In Patients (IP)	
		No.of Cases	Percentage	No. of cases	Percentage
1	Mei	20	100	20	100
2	Vaai	-	-	-	-
3	Kan	-	-	-	-
4	Mooku	-	-	-	-
5	Sevi	-	-	-	-



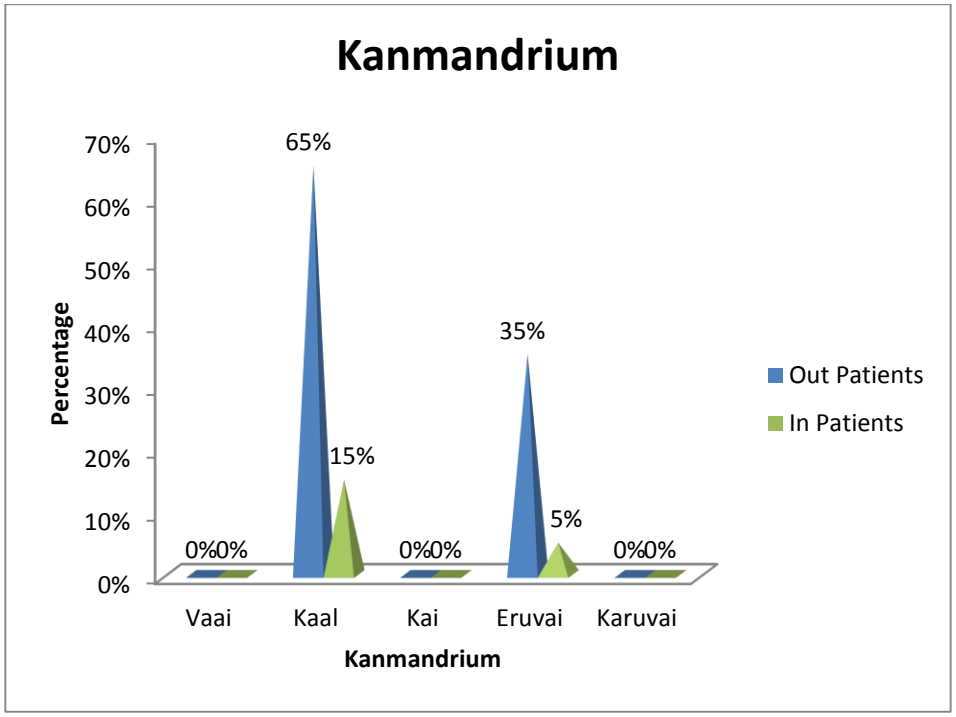
INFERENCE:

Among 40 cases most of the patients were affected Mei (100% of OP&IP)

16. Kanmandrium:

Table 16- Illustrates the Kanmandrium and its percentage.

SL. No.	Kanmandrium	Out Patients (OP)		In Patients (IP)	
		No.of Cases	Percentage	No. of cases	Percentage
1	Vaai	-	-	-	-
2	Kaal	13	65	15	75
3	Kai	-	-	-	-
4	Eruvai	7	35	5	25
5	Karuvai	-	-	-	-



Among 20 out patients:

65% of patients were affected in kaal, 35% of cases were affected in Eruvai.

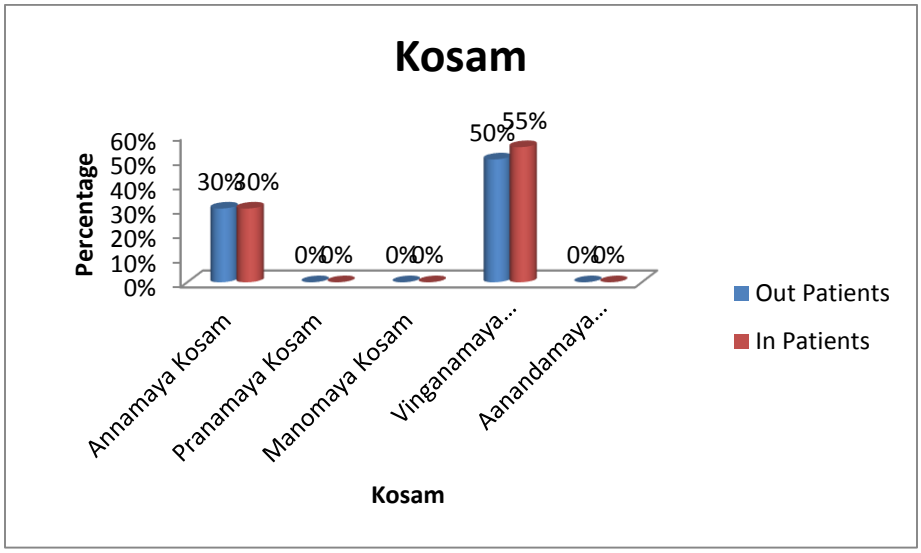
Among 20 In patients:

75% of patients were affected in kaal, 25% of cases were affected in Eruvai

17. Kosam:

Table1 17- Illustrates the Kosam and its percentage.

SL. No.	Kosam	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Annamaya Kosam	6	30	6	30
2	Pranamaya kosam	-	-	-	-
3	Manomaya kosam	-	-	-	-
4	Vinganamaya kosam	10	50	11	55
5	Aanandamaya kosam	-	-	-	-



Among 20 out patients:

30% of patients were affected in Annamayakosam, 50% were affected in Vinganamayakosam.

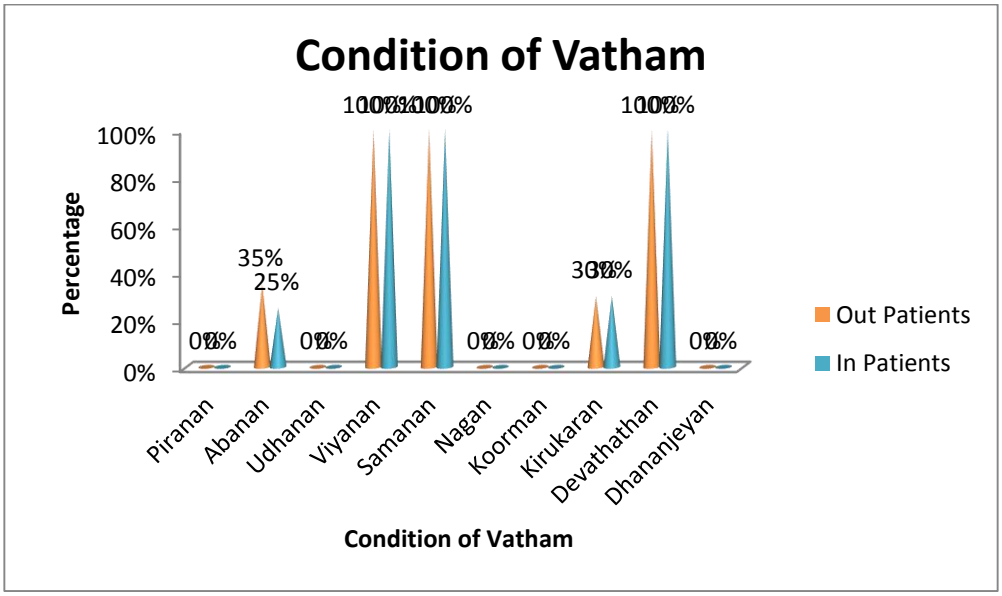
Among 20 In patients:

30% of patients were affected in Annamayakosam, 55% were affected in Vinganamayakosam.

18. Condition of Mukkutram:

Table 18- Illustrates the Condition of Vaatham and its percentage.

SL. No.	Condition of vaatham	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Piranan	-	-	-	-
2	Abanan	7	35	5	25
3	Udhanan	-	-	-	-
4	Viyanan	20	100	20	100
5	Samanan	20	100	20	100
6	Nagan	-	-	-	-
7	Koorman	-	-	-	-
8	Kirukaran	6	30	6	30
9	Devathathan	20	100	20	100
10	Dhananjeyan	-	-	-	-



Viyanan, Samanan and Devathathan was affected in 100% of the patients in both OP&IP.

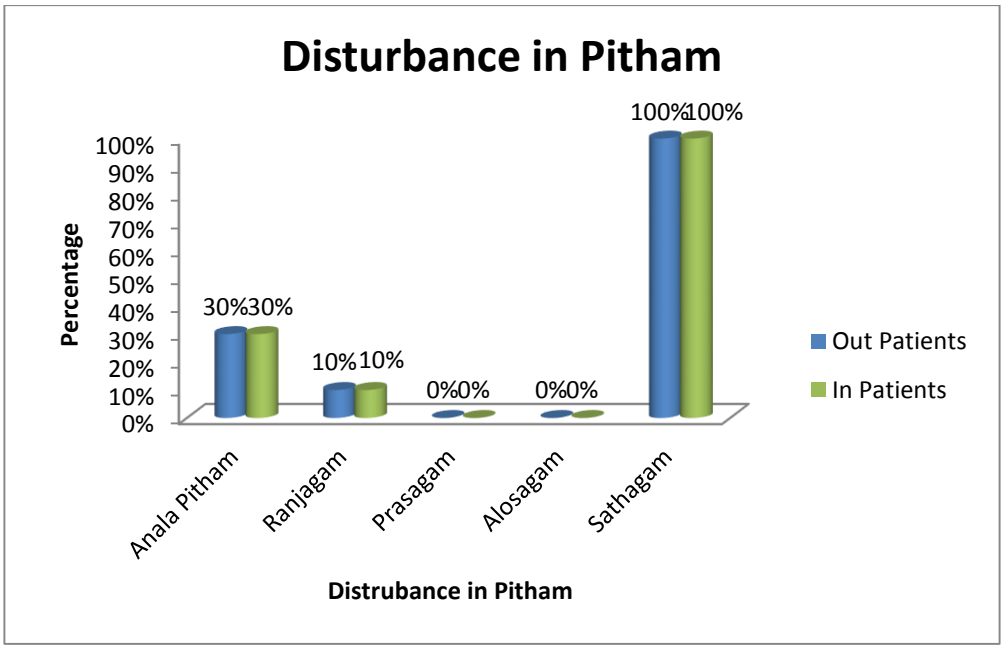
Abanan was affected in 35% of OP& 25% of IP.

Kirukaran was affected in 30% of both OP&IP patients.

18. (a) Disturbance in pitham:

Table 18 (a)- Illustrates the Disturbance in Pitham and its percentage.

SL. No.	Disturbance in pitham	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Anala pitham	6	30	6	30
2	Ranjagam	2	10	2	10
3	Prasagam	-	-	-	-
4	Alosagam	-	-	-	-
5	Sathagam	20	100	20	100



Among the 40 Patients Anala pitham was affected in 30% of OP & IP cases.

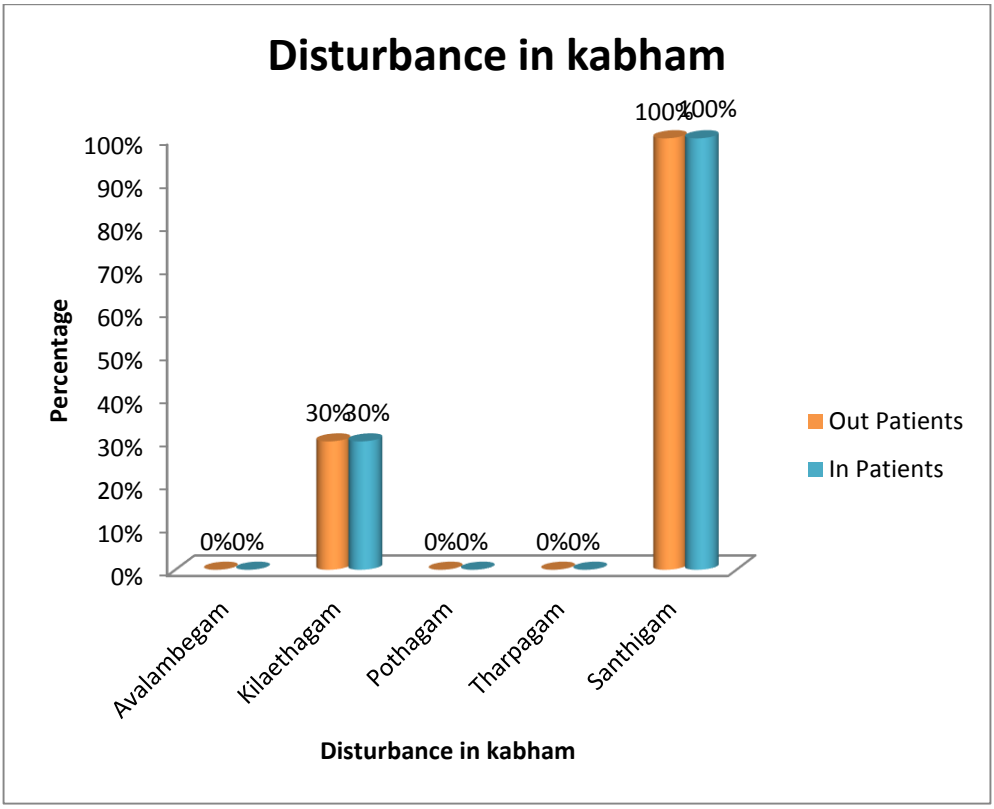
Ranjagam was affected in 10% of OP cases & 10% of IP cases.

Sathagam was affected in all 40 cases which produce difficulty in performing regular daily activities.

18. (b) Disturbance in Kabham:

Table 18(b) – Illustrates the Disturbance inKabham and its percentage.

SL. No.	Disturbance in Kabham	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Avalambegam	-	-	-	-
2	Kilaethagam	6	30	6	30
3	Pothagam	-	-	-	-
4	Tharpagam	-	-	-	-
5	Santhigam	20	100	20	100



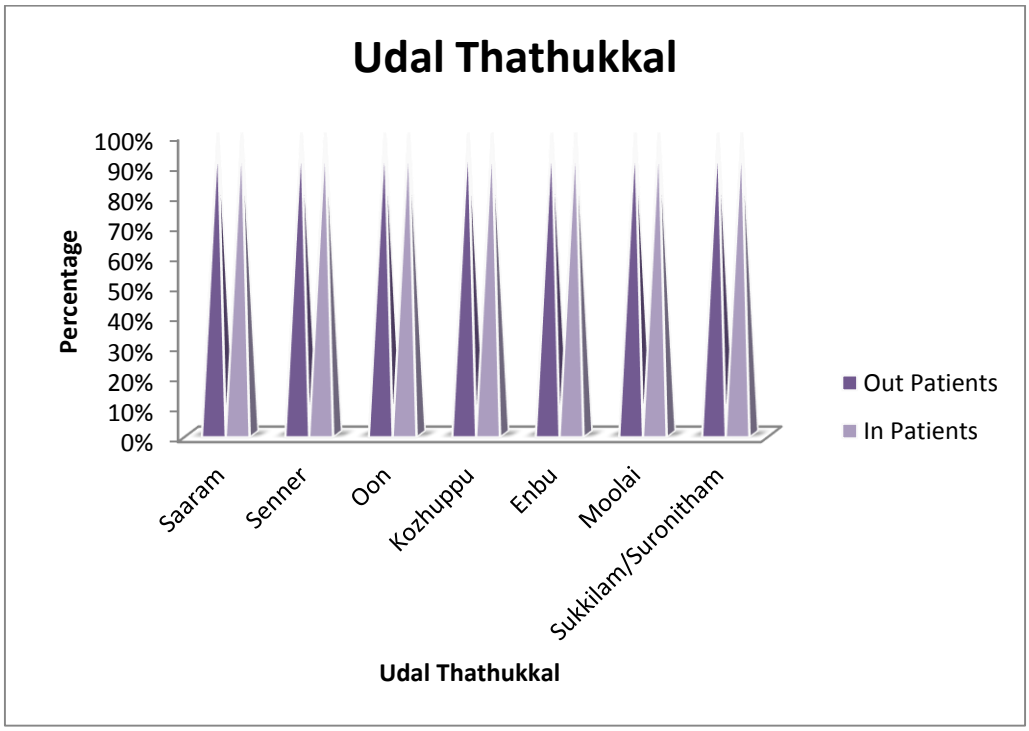
Kilaethagam was affected in 30% of both OP & IP cases.

Santhigam was affected in 100% of OP & IP cases.

19. Involvement of Udalthathukkal:

Table 19- Illustrates the Involvement of Udalthathukkal and its percentage.

SL. No.	UdalThathukkal	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Saaram	20	100	20	100
2	Senner	20	100	20	100
3	Oon	20	100	20	100
4	Kozhuppu	20	100	20	100
5	Enbu	20	100	20	100
6	Moolai	20	100	20	100
7	Sukkilam / Suronitham	20	100	20	100



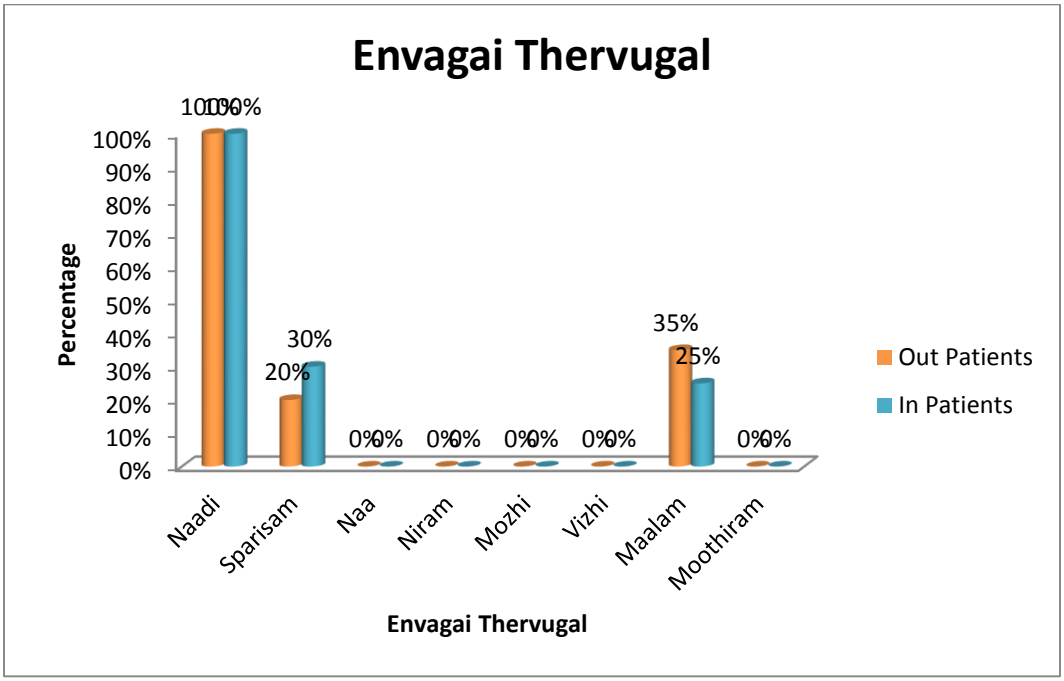
Among 20 Out & In patients:

Saaram, Senner, Oon, Kozhuppu, Enbu, Moolai, Sukkilam /Suronitham were affected in 100% of Both OP& IP.

20. Conditions of EnvagaiThervugal:

Table 20- Illustrates the Conditions of Envagai Thervugal and its percentage.

SL. No.	EnvagaiThervugal	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Naadi	20	100	20	100
2	Sparisam	4	20	6	30
3	Naa	-	-	-	-
4	Niram	-	-	-	-
5	Mozhi	-	-	-	-
6	Vizhi	-	-	-	-
7	Maalam	7	35	5	25
8	Moothiram	-	-	-	-



Inference:

Sparisam was affected in 20% of OP cases & 30% of OP cases.

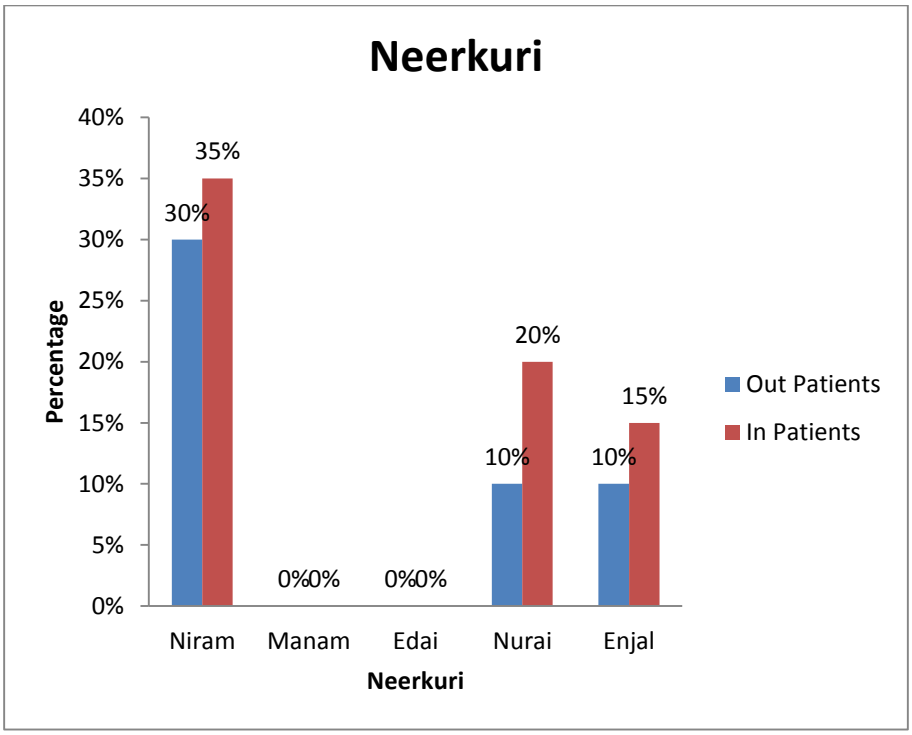
Malam was affected in 35% of OP & 25% of IP cases.

All the OP& IP cases showed Thontha naadi in which Vathapitha naadi was predominant.

21. Neerkuri:

Table 21- Illustrates the Neerkuri condition and its percentage.

SL. No.	Neerkuri	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Niram	6	30	7	35
2	Manam	-	-	-	-
3	Edai	--		-	-
4	Nurai	2	10	4	20
5	Enjal	2	10	3	15



Inference:

Niram was affected in 30% of OP cases & 35% of IP cases.

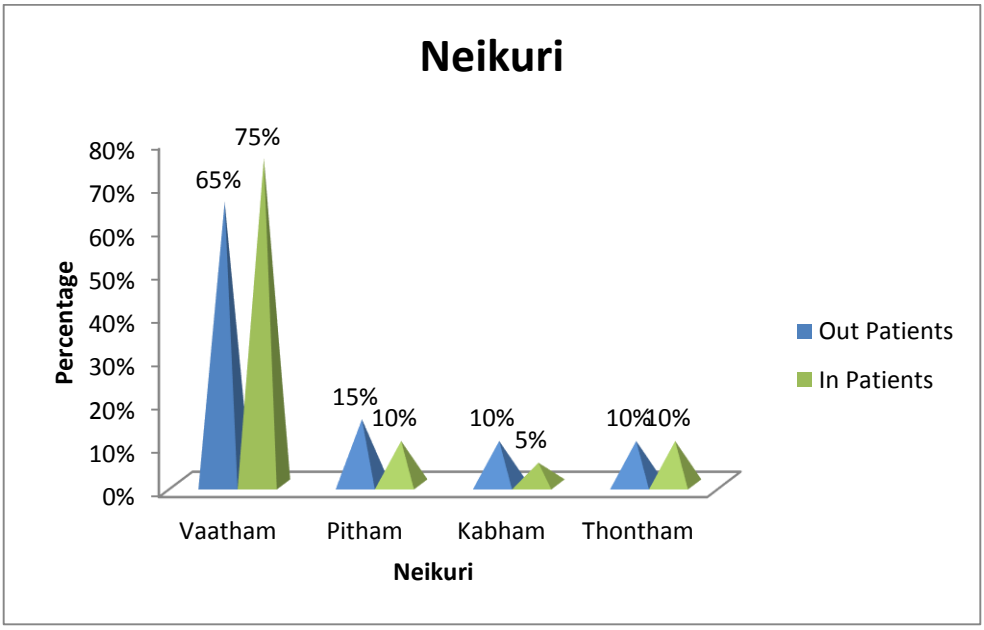
Nurai was affected in 10% of OP cases & 20% of IP cases.

Enjal was affected in 10% of OP cases & 15% of IP cases.

22. Neikuri:

Table 22- Illustrates the Neikuri Conditions and its percentage.

SL. No.	Kuttram	Neikuri	Out Patients (OP)		In Patients (IP)	
			No. of Cases	Percentage	No. of cases	Percentage
1	Vaatham	Spreading like snake	13	65	15	75
2	Pitham	Spreading like ring	3	15	2	10
3	Kabham	Spreading like pearl	2	10	1	5
4	Thontham	AsathiyaNeikurigal	2	10	2	10



Among 20 Out patients:

65% of patients had Vathaneer, 15% had Pithaneer, 10% had Kabaneer, 10% had Thonthaneer.

Among 20 In patients:

75% of patients had Vathaneer, 10% had Pithaneer, 5% had Kabaneer, 10% had Thonthaneer.

நெய்க்குறி

வாதநீர்

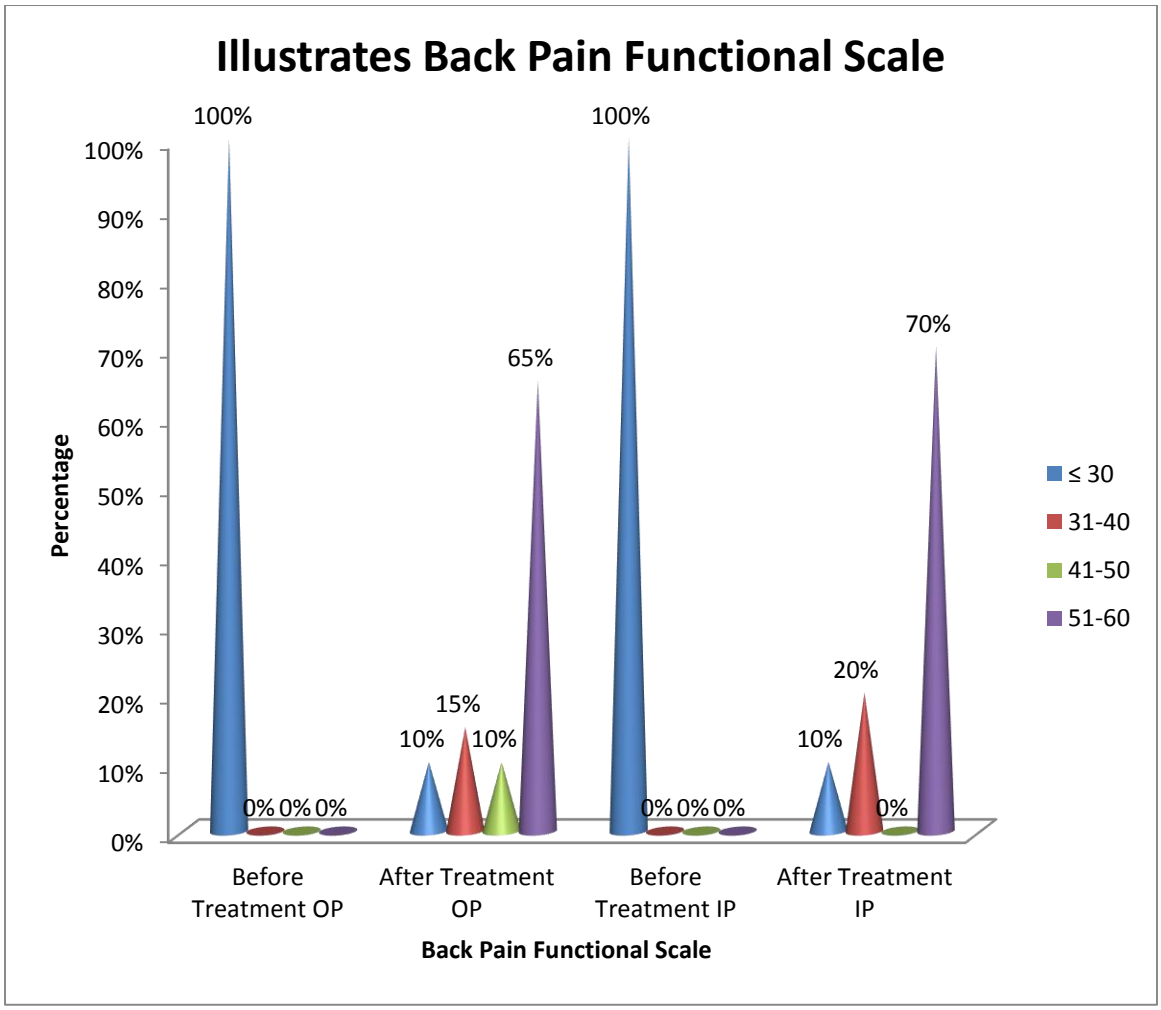
பித்த நீர்

கபநீர்

23. Assessment of Outcome:

Table 23- Illustrates Back pain functional

SL. No	Pain Score	Out Patients (OP)				In Patients (IP)			
		Before Treatment		After Treatment		Before Treatment		After Treatment	
		No.Of Cases	%	No. Of Cases	%	No. Of Cases	%	No. Of Cases	%
1	≤ 30	20	100	2	10	20	100	2	10
2	31-40	-	-	3	15	-	-	4	20
3	41-50	-	-	2	10	-	-	-	-
4	51-60	-	-	13	65	-	-	14	70



(Minimum Score – 0 , Maximum Score – 60)

Pain Score	Improvement
≤ 30	No
31-40	Mild
41-50	Moderate
51-60	Good

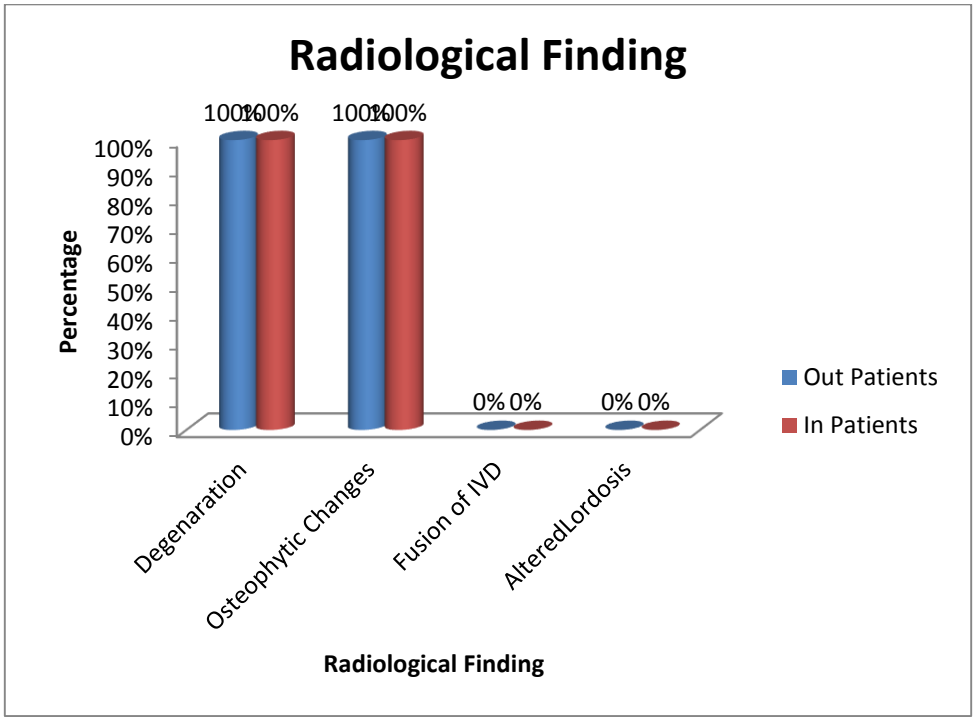
Before treatment high incidence of back pain functional score is reported in the range from ≤ 30.

After treatment high incidence of back pain functional score is reported in the range from 51-60. i.e. 65% of OP and 70% of IP cases had good improvement and 25% of OP & 20% of IP cases had moderate improvement.

24. Radiological Findings:

Table 24- Illustrates Radiological Findings and its percentage.

SL. No.	Radiological Findings	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Degenaration	20	100	20	100
2	Osteophytic Changes	20	100	20	100
3	Fusion of IVD	-	-	-	-
4	Altered lordosis	-	-	-	-



Among 20 OP Patients:

100% showed degeneration & osteophyte changes were observed.

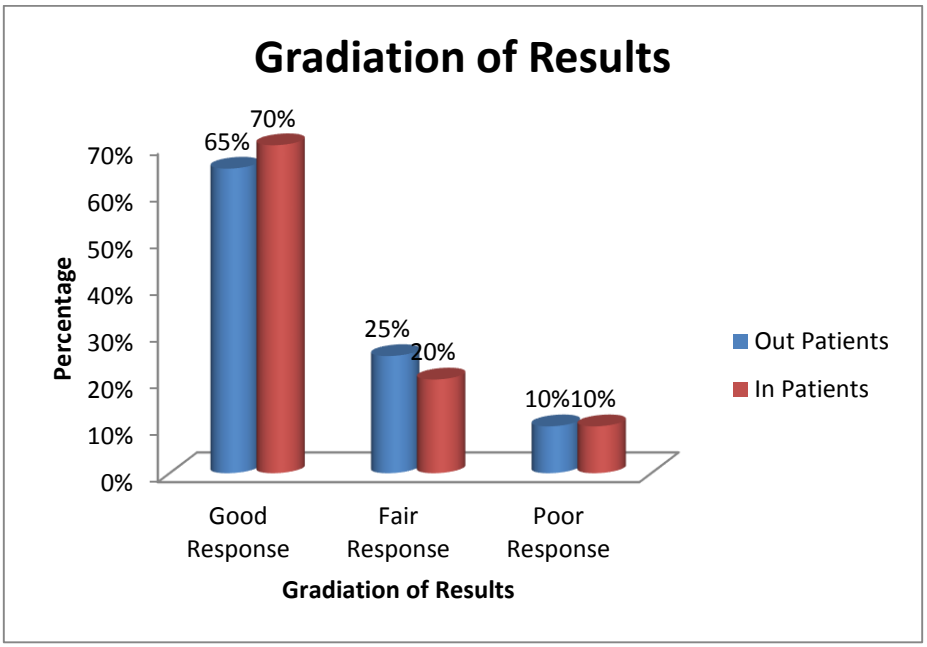
Among 20 IP Patients:

100% showed degeneration & osteophyte changes were observed.

25. Gradiation of Results:

Table 25- Illustrates Gradiation of results and relative percentage.

SL. No.	Results	Out Patients (OP)		In Patients (IP)	
		No. of Cases	Percentage	No. of cases	Percentage
1	Good Response	13	65	14	70
2	Fair response	5	25	4	20
3	Poor response	2	10	2	10



Among 20 Out Patients:

65% of OP cases showed good response, 25% of cases showed fair response.

Among 20 In Patients:

70% of OP cases showed good response, 20% of cases showed fair response

OUT PATIENTS REPORT

SL.NO	OP.NO	NAME	AGE/SEX	OCCUPATION	DURATION OF ILLNESS	TREATMENT STARTING DATE	END OF THE TREATMENT DATE	TOTAL DAYS	RESULTS
1	8417	DURAI	42/M	COOLI	1 MONTH	26.1.2016	24.2.2016	30	POOR
2	8797	MAYILAMMAL	57/F	HOUSE WIFE	3 MONTHS	27.1.2016	25.2.2016	30	GOOD
3	8774	MARIAPPAN	55/M	FARMER	2 MONTHS	27.1.2016	25.2.2016	30	GOOD
4	9631	THANGAM	35/F	HOUSE WIFE	2 MONTHS	29.1.2016	27.2.2016	30	GOOD
5	9949	SELVAKUMAR	49/M	DRIVER	3 MONTHS	30.1.2016	28.2.2016	30	GOOD
6	10029	MAYILMARI	35/F	HOUSE WIFE	3 MONTHS	30.1.2016	28.2.2016	30	GOOD
7	10456	ANTONY	30/M	DRIVER	3 YEARS	1.2.2016	1.3.2016	30	FAIR
8	10464	RANJITHKUMAR	40/M	DRIVER	6 MONTHS	1.2.2016	1.3.2016	30	POOR
9	10971	MURUGASUBRAMANIAN	25/M	LOADMAN	8 MONTHS	2.2.2016	2.3.2016	30	GOOD
10	11301	GANDHI	50/M	FARMER	1 YEARS	3.2.2016	3.3.2016	30	FAIR
11	12377	PARVATHAGANAPATHY	23/F	TAILOR	6 MONTHS	6.2.2016	6.3.2016	30	GOOD
12	13182	LAKSHMI	45/F	HOUSE WIFE	2 MONTHS	9.2.2016	9.3.2016	30	GOOD
13	13761	RANJITHAM	48/F	HOUSE WIFE	8 MONTHS	10.2.2016	10.3.2016	30	GOOD
14	13890	SUBBULAKSHMI	36/F	HOUSE WIFE	15 DAYS	11.2.2016	11.3.2016	30	GOOD
15	14759	SAHUL HAMEED BASHA	36/M	BUSINESS	3 MONTHS	13.2.2016	13.3.2016	30	FAIR
16	14835	SRI RAMAN	21/M	TAILOR	7 MONTHS	13.2.2016	13.3.2016	30	FAIR
17	15377	BAKIYAM	55/F	HOUSE WIFE	6 MONTHS	15.2.2016	15.3.2016	30	GOOD
18	15312	CHANDRASEKAR	48/M	FARMER	8 MONTHS	15.2.2016	15.3.2016	30	GOOD
19	17646	VEMBU	60/F	HOUSE WIFE	2 YEARS	22.2.2016	22.3.2016	30	FAIR
20	20057	ANJALI	33/F	HOUSE WIFE	7 MONTHS	29.2.2016	29.3.2016	30	GOOD

IN PATIENTS REPORT

SL.NO	IP.NO	NAME	AGE/SEX	OCCUPATION	DURATION OF ILLNESS	DOA	DOD	NO OF DAYS		TOTAL DAYS	RESULTS
								IP	OP		
1	209	ESSAKIAMMAL	60/F	HOUSE WIFE	1 MONTHS	28.1.2016	29.2.2016	33	-	33	GOOD
2	219	SHANTHI	50/F	HOUSE WIFE	2 YEARS	29.1.2016	29.2.2016	32	-	32	GOOD
3	221	NALLAMUTHU	60/F	HOUSE WIFE	4 MONTHS	29.1.2016	25.2.2016	28	2	30	GOOD
4	297	MADASWAMY	60/M	FARMER	3 YEARS	3.2.2016	23.2.2016	21	9	30	FAIR
5	326	PARVATHY	60/F	HOUSE WIFE	8 MONTHS	8.2.2016	8.3.2016	30	-	30	GOOD
6	382	MANI	52/M	FARMER	2 YEARS	15.2.2016	17.3.2016	32	-	32	GOOD
7	397	PARVATHY	60/F	HOUSE WIFE	1 MONTHS	15.2.2016	7.3.2016	22	8	30	POOR
8	421	SHUNMUGAKANI	48/F	HOUSE WIFE	2 YEARS	17.2.2016	18.3.2016	31	-	31	FAIR
9	441	CHELLAIYA THEVER	55/M	FARMER	10 MONTHS	19.2.2016	21.3.2016	32	-	32	GOOD
10	589	ANNALAKSHMI	60/F	HOUSE WIFE	3 YEARS	4.3.2016	4.4.2016	32	-	32	GOOD
11	609	SEETHAIAMMAL	60/F	HOUSE WIFE	6 MONTHS	7.3.2016	28.3.2016	22	8	30	GOOD
12	616	MADATHI	35/F	HOUSE WIFE	1 YEAR	7.3.2016	27.3.2016	21	9	30	GOOD
13	707	SEVATHAIYA NADAR	60/M	FARMER	1 YEAR	16.3.2016	30.3.2016	15	15	30	POOR
14	782	RAVI	58/M	COOLI	2 MONTHS	24.3.2016	16.4.2016	24	6	30	GOOD
15	820	PARAMASIVAN	58/M	FARMER	3YEARS	27.3.2016	25.4.2016	30	-	30	GOOD
16	896	MARIYADOSS	60/M	BUSINESS	9 MONTHS	2.4.2016	21.4.2016	20	10	30	FAIR
17	933	LAKSHMI	50/F	HOUSE WIFE	1 YEAR	5.4.2016	24.4.2016	20	10	30	FAIR
18	1017	KUMARAN	40/M	TAILOR	3YEARS	16.4.2016	17.5.2016	32	-	32	GOOD
19	1046	MANI	52/M	COOLI	7 MONTHS	19.4.2016	18.5.2016	30	-	30	GOOD
20	1107	MARIAMMAL	28/F	TAILOR	3YEARS	25.4.2016	16.5.2016	22	8	30	GOOD

RADIOGRAPHIC FINDINGS AND LABORATORY INVESTIGATIONS (OP PATIENTS)

SL.NO	OP.NO	RADIOLOGICAL FINDING	BLOOD SUGAR ®		BLOOD UREA		SERUM CHOLESTEROL		CREATININE		RA FACTOR
			BT	AT	BT	AT	BT	AT	BT	AT	
1	8417	Spondylotic Changes	100	99	20	19	170	172	0.9	0.9	18
2	8797	Spondylotic Changes	102	100	17	15	160	160	0.7	0.6	18.2
3	8774	Spondylotic Changes	104	102	15	13	158	162	0.8	0.7	19.1
4	9631	Spondylotic Changes	90	90	13	13	200	198	0.6	0.6	11
5	9949	Spondylotic Changes	98	98	22	22	197	195	0.6	0.6	14.2
6	10029	Spondylotic Changes	100	98	20	18	182	190	0.4	0.5	12.4
7	10456	Spondylotic Changes	100	100	18	18	180	192	0.6	0.5	12.6
8	10464	Spondylotic Changes	120	120	19	20	175	180	0.9	0.7	18
9	10971	Spondylotic Changes	110	109	21	22	168	165	0.7	0.8	19.2
10	11301	Spondylotic Changes	80	82	23	20	159	150	0.4	0.6	6.7
11	12377	Spondylotic Changes	82	80	28	26	179	167	0.8	0.7	9.4
12	13182	Spondylotic Changes	89	86	30	30	183	172	0.6	0.4	8.2
13	13761	Spondylotic Changes	95	90	32	31	185	185	0.5	0.6	11
14	13890	Spondylotic Changes	90	92	34	33	192	190	1	0.8	17.4
15	14759	Spondylotic Changes	90	90	30	30	172	180	0.9	0.7	17.4
16	14835	Spondylotic Changes	92	92	26	25	169	172	0.7	0.5	12.6
17	15377	Spondylotic Changes	99	99	29	26	200	200	0.8	0.9	19
18	15312	Spondylotic Changes	100	98	32	31	210	200	0.4	0.3	18.3
19	17646	Spondylotic Changes	102	98	28	28	187	191	0.9	0.7	11.6
20	20057	Spondylotic Changes	104	96	30	26	192	190	1	0.8	12.2

RADIOGRAPHIC FINDINGS AND LABORATORY INVESTIGATIONS (IP PATIENTS)

SL.NO	IP.NO	RADIOLOGICAL FINDING	BLOOD SUGAR ®		BLOOD UREA		SERUM CHOLESTEROL		CREATININE		RA FACTOR
			BT	AT	BT	AT	BT	AT	BT	AT	
1	209	Spondylotic Changes	98	97	28	27	190	182	0.5	0.6	17
2	219	Spondylotic Changes	112	112	32	30	195	180	0.6	0.5	18.2
3	221	Spondylotic Changes	100	102	25	24	200	200	0.9	0.9	19.4
4	297	Spondylotic Changes	102	100	26	25	210	200	1	0.9	16
5	326	Spondylotic Changes	96	95	31	31	185	190	0.8	0.8	13.8
6	382	Spondylotic Changes	82	82	36	35	192	190	0.8	0.8	16
7	397	Spondylotic Changes	110	98	28	28	175	180	1	1	17.9
8	421	Spondylotic Changes	104	96	24	25	181	170	1	0.9	18.4
9	441	Spondylotic Changes	98	95	21	21	202	200	0.6	0.7	18.4
10	589	Spondylotic Changes	88	83	37	30	196	195	0.5	0.5	19.2
11	609	Spondylotic Changes	102	99	28	26	183	173	0.4	0.3	17.9
12	616	Spondylotic Changes	110	104	25	25	191	190	0.6	0.7	16.4
13	707	Spondylotic Changes	112	109	29	29	206	200	0.7	0.8	15.8
14	782	Spondylotic Changes	120	113	19	20	200	195	0.9	0.9	14.4
15	820	Spondylotic Changes	102	98	18	20	193	192	1.1	1	13.9
16	896	Spondylotic Changes	96	93	20	21	197	197	0.5	0.4	17.9
17	933	Spondylotic Changes	87	84	23	20	170	170	0.4	0.6	12.8
18	1017	Spondylotic Changes	92	88	22	22	173	168	0.4	0.4	13.9
19	1046	Spondylotic Changes	99	84	20	19	169	172	0.6	0.7	14.7
20	1107	Spondylotic Changes	103	97	21	18	180	180	0.8	0.7	19.4

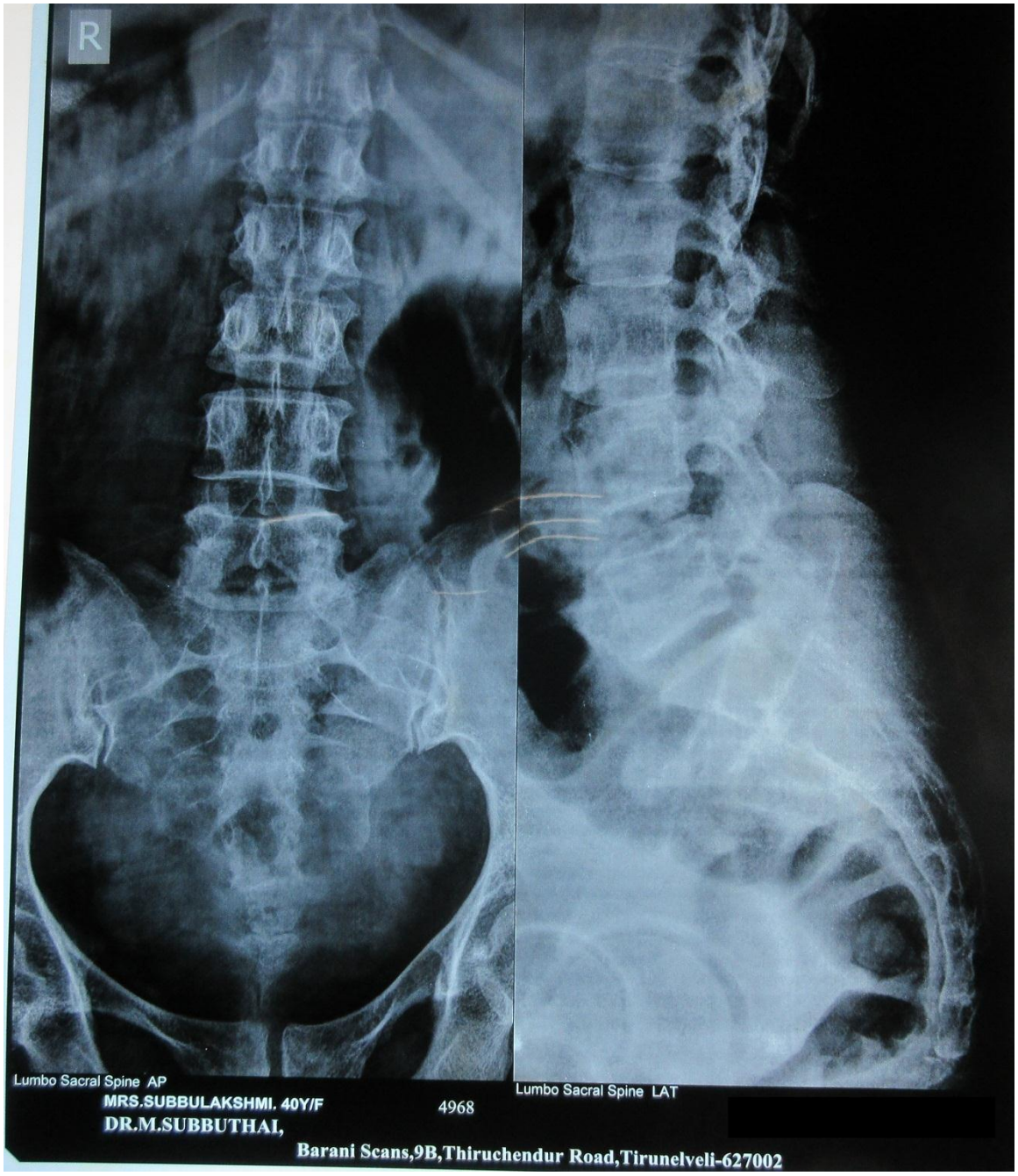
LABORATORY INVESTIGATION (OP PATIENTS)																					
Sl. No	OP.No	HAEMOTOLOGICAL REPORT														URINE ANALYSIS					
		BEFORE TREATMENT							AFTER TREATMENT							BEFORE TREATMENT			AFTER TREATMENT		
		TC	DC			ESR mm		Hb% gms	TC	DC			ESR mm		Hb% gms	Alb	Sug	Dep-epi cells/puscells	Alb	Sug	Dep-epi cells/puscells
			P%	L%	E%	½ Hr	1Hr			P%	L%	E%	½ Hr	1Hr							
1	8417	9400	63	30	5	5	11	12	9400	65	32	4	5	10	13	NIL	NIL	NAD	NIL	NIL	NAD
2	8797	9300	65	34	4	10	22	13.4	9500	65	34	3	10	20	13	NIL	NIL	NAD	NIL	NIL	NAD
3	8774	8800	62	33	3	11	22	12.6	9000	62	33	2	12	22	12.6	NIL	NIL	NAD	NIL	NIL	NAD
4	9631	9100	66	33	2	10	18	13.4	9200	66	32	5	9	18	13.4	NIL	NIL	NAD	NIL	NIL	NAD
5	9949	9300	68	32	5	9	19	11	9300	67	30	4	7	14	12	NIL	NIL	1-2 Epi cells	NIL	NIL	1-2 Epi cells
6	10029	7800	67	30	4	8	16	10.8	8000	60	30	4	6	14	12	NIL	NIL	NAD	NIL	NIL	NAD
7	10456	9200	67	30	4	6	14	11.6	9200	66	32	3	5	12	12.4	NIL	NIL	NAD	NIL	NIL	NAD
8	10464	9100	65	35	4	11	22	12.4	9100	65	34	1	10	22	12.4	NIL	NIL	NAD	NIL	NIL	NAD
9	10971	9100	64	36	3	11	23	11.8	9200	63	36	0	10	24	11.8	NIL	NIL	NAD	NIL	NIL	NAD
10	11301	9400	63	36	2	13	20	13.4	9400	60	35	2	13	20	12.8	NIL	NIL	NAD	NIL	NIL	NAD
11	12377	9500	63	35	2	12	23	13.4	9000	60	30	2	12	24	13.4	NIL	NIL	1-2Puscells	NIL	NIL	NAD
12	13182	8800	63	34	1	9	18	12.8	9100	62	34	0	8	16	12.4	NIL	NIL	NAD	NIL	NIL	NAD
13	13761	8800	62	33	0	7	14	11.8	9200	60	33	1	7	15	12.6	NIL	NIL	NAD	NIL	NIL	NAD
14	13890	9900	60	33	1	6	13	10.6	9700	63	32	1	5	12	11.8	NIL	NIL	NAD	NIL	NIL	NAD
15	14759	9200	67	34	2	6	14	11.4	9500	65	36	2	6	14	11.4	NIL	NIL	1-3 Epi cells	NIL	NIL	1-2 Epi cells
16	14835	9400	68	32	3	4	9	12.6	9500	66	30	2	5	10	12.6	NIL	NIL	NAD	NIL	NIL	NAD
17	15377	7800	68	32	4	5	12	12.6	8400	68	32	4	4	9	12.8	NIL	NIL	NAD	NIL	NIL	NAD
18	15312	8600	66	30	4	9	18	13.4	8900	66	32	4	10	20	13.4	NIL	NIL	NAD	NIL	NIL	NAD
19	17646	8800	65	36	5	10	22	13	8700	64	34	3	9	18	12	NIL	NIL	NAD	NIL	NIL	NAD
20	20057	9400	66	37	2	11	20	10	9600	66	34	2	10	12	13.4	NIL	NIL	2-3 Puscells	NIL	NIL	1-2Puscells

LABORATORY INVESTIGATION (IP PATIENTS)

Sl. No	IP.No	HAEMOTOLOGICAL REPORT														URINE ANALYSIS					
		BEFORE TREATMENT							AFTER TREATMENT							BEFORE TREATMENT			AFTER TREATMENT		
		TC	DC			ESR mm		Hb% gms	TC	DC			ESR mm		Hb% gms	Alb	Sug	Dep-epi cells/puscells	Alb	Sug	Dep-epi cells/puscells
			P%	L%	E%	½ Hr	1Hr			P%	L%	E%	½ Hr	1Hr							
1	209	9400	65	30	4	4	9	11	9000	64	30	2	5	9	12	NIL	NIL	NAD	NIL	NIL	NAD
2	219	8600	65	32	3	10	16	12	9100	65	34	3	10	12	12	NIL	NIL	1-2 Epicells	NIL	NIL	NAD
3	221	9300	63	38	5	11	21	12	9300	63	35	5	12	21	13	NIL	NIL	NAD	NIL	NIL	NAD
4	297	9100	60	35	1	11	23	14	9200	60	35	4	10	21	13	NIL	NIL	3-4 Puscells	NIL	NIL	1-2 Puscells
5	326	8800	63	33	5	4	9	10	8900	65	34	5	4	10	11	NIL	NIL	NAD	NIL	NIL	NAD
6	382	9400	62	30	2	11	22	13	9400	60	32	2	12	22	13	NIL	NIL	1-2 Epicells	NIL	NIL	1-2 Epicells
7	397	9400	62	34	3	6	14	12	9300	64	34	1	6	14	12	NIL	NIL	NAD	NIL	NIL	NAD
8	421	8700	68	31	4	6	16	11	8700	66	31	4	6	16	13	NIL	NIL	NAD	NIL	NIL	NAD
9	441	8400	67	36	4	9	18	11	9000	65	36	5	8	15	12	NIL	NIL	NAD	NIL	NIL	NAD
10	589	9300	67	33	5	11	23	12	9500	66	34	1	10	18	13	NIL	NIL	NAD	NIL	NIL	NAD
11	609	9200	63	32	2	4	10	13	9400	62	33	2	4	12	13	NIL	NIL	NAD	NIL	NIL	NAD
12	616	9000	61	38	3	8	17	9	9000	61	38	2	8	16	13	NIL	NIL	2-3 Puscells	NIL	NIL	NAD
13	707	7800	66	37	4	7	16	12	8000	65	37	4	7	14	13	NIL	NIL	2-3 Puscells	NIL	NIL	NAD
14	782	8400	64	30	2	10	15	11	8400	64	32	3	11	22	12	NIL	NIL	NAD	NIL	NIL	NAD
15	820	9200	65	33	0	7	14	14	9400	63	30	0	6	16	13	NIL	NIL	NAD	NIL	NIL	NAD
16	896	7500	62	34	3	9	21	12	8900	60	35	3	9	16	13	NIL	NIL	NAD	NIL	NIL	NAD
17	933	9100	66	37	5	10	18	10	9700	64	38	3	11	22	12	NIL	NIL	NAD	NIL	NIL	NAD
18	1017	9300	67	36	2	8	16	12	9400	62	36	2	8	16	13	NIL	NIL	NAD	NIL	NIL	NAD
19	1046	8700	64	32	4	7	14	13	8700	66	33	5	9	14	14	NIL	NIL	2-4 Epicells	NIL	NIL	NAD
20	1107	8600	60	38	1	7	15	12	8600	62	37	1	7	15	13	NIL	NIL	1-2 Epicells	NIL	NIL	NAD

BEFORE TREATMENT:

OP CASE NO.14



BARANI SCANS

Serving with Humanity

NAME	Mrs.SUBBULAKSHMI	Date	17.02.16
AGE/SEX	40Y/F	ID	4968
Ref.By	Dr.SUBBUTHAI MD(S).,		

X-RAY LUMBAR SPINE AP & LATERAL

Small anterior osteophytes present in L3 to L5 vertebra.

Alignment of vertebra appears normal.

The vertebra appear normal.

The intervertebral disc spaces appear normal.

Paravertebral soft tissue appear normal.

IMPRESSION:

- Anterior spondylotic changes in L3 to L5 vertebra.

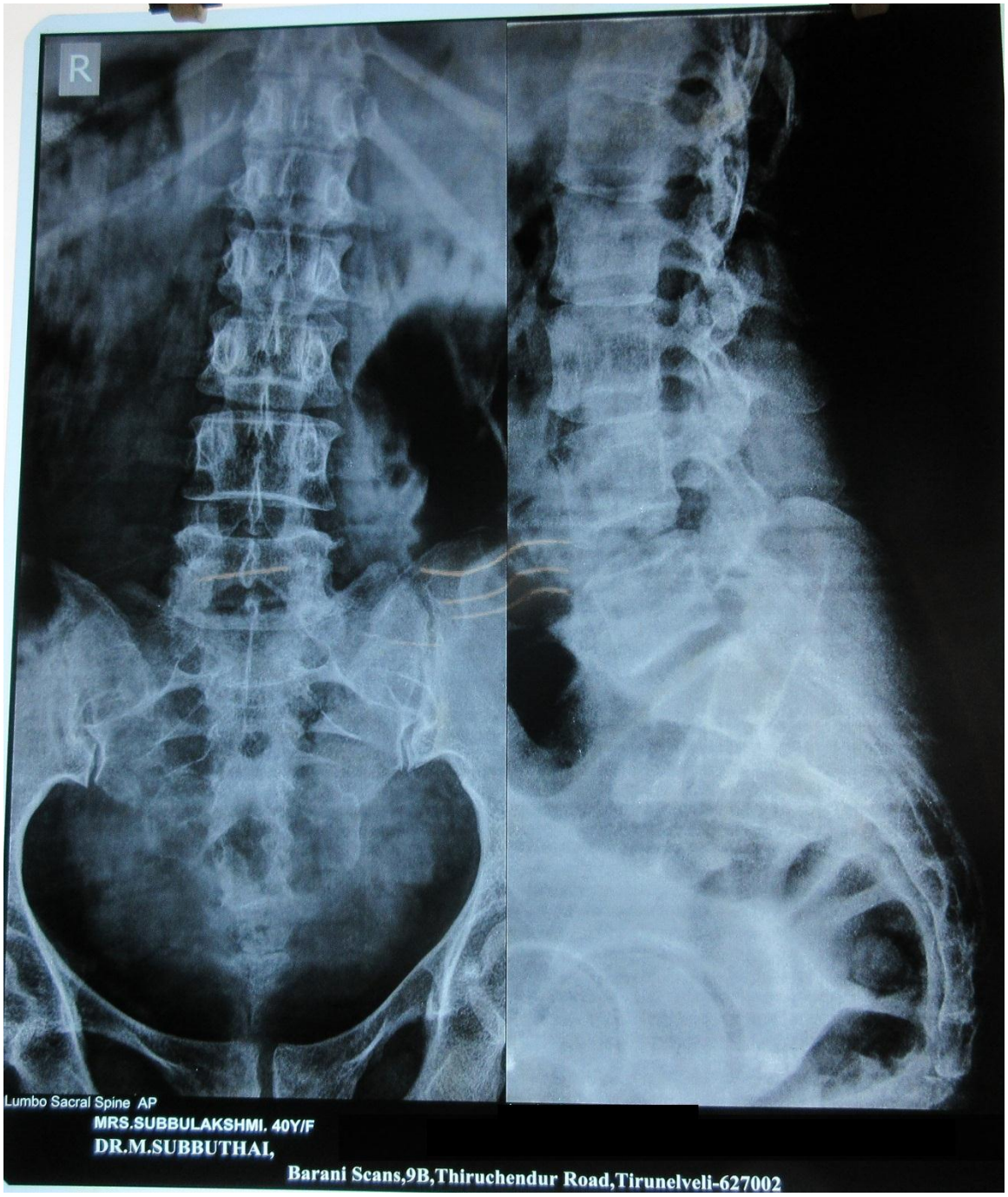
Dr.A.GOPINATH,MD(RD)
CONSULTANT RADIOLOGIST
Ph.No:8870009015

Note: *This imaging modulity has its own limitations. Hence it should be correlated with clinical & other parameters. Patient's identity is not verified.*

9-B, Thiruchendur Road, (Near Murugankuruchi Signal)
Palayamkottai, TIRUNELVELI - 627 002.
Ph : 0462 - 2583222, 0462 - 4000014 email : baraniscans@yahoo.com

AFTER TREATMENT:

OP CASE NO.14



BARANI SCANS

Serving with Humanity

NAME	Mrs.SUBBULAKSHMI	Date	17.03.16
AGE/SEX	40Y/F	ID	5102
Ref.By	Dr.SUBBUTHAI MD(S).,		

X-RAY LUMBAR SPINE AP & LATERAL

Small anterior osteophytes present in L3 to L5 vertebra.

Alignment of vertebra appears normal.

The vertebra appear normal.

The intervertebral disc spaces appear normal.

Paravertebral soft tissue appear normal.

IMPRESSION:

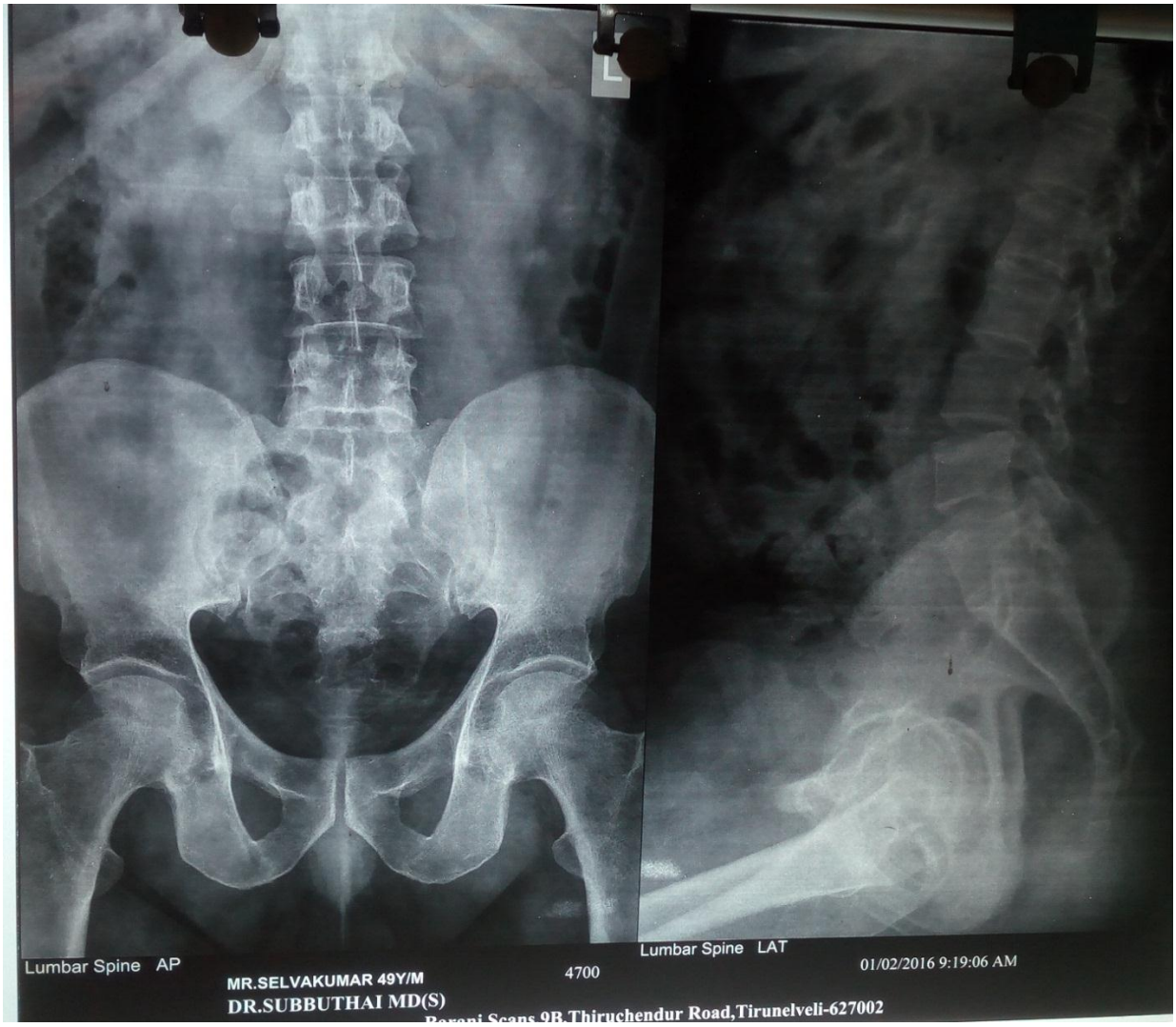
- Anterior spondylotic changes in L3 to L5 vertebra.

Dr.A.GOPINATH,MD(RD)
CONSULTANT RADIOLOGIST
Ph.No:8870009015

Note: *This imaging modulity has its own limitations. Hence it should be correlated with clinical & other parameters. Patient's identity is not verified.*

9-B, Thiruchendur Road, (Near Murugankuruchi Signal)
Palayamkottai, TIRUNELVELI - 627 002.
Ph : 0462 - 2583222, 0462 - 4000014 email : baraniscans@yahoo.com

OP CASE NO. 05


Lumbar Spine AP
MR.SELVAKUMAR 49Y/M
4700
Lumbar Spine LAT
01/02/2016 9:19:06 AM
DR.SUBBUTHAI MD(S)
Scans 9B,Thiruchendur Road,Tirunelveli-627002

BARANI SCANS

Serving with Humanity

NAME	Mr. SELVA KUMAR	Date	01/02/16
AGE/SEX	49Y/M	ID	4700
Ref.By	Dr. SUBBUTHAI,MD(S).,		

X-RAY LUMBAR SPINE AP & LATERAL

Small anterior osteophytes present in L4 & L5 vertebra.

Alignment of vertebra appears normal.

The vertebra appear normal.

Other intervertebral disc spaces appear normal.

Paravertebral soft tissue appear normal.

IMPRESSION:

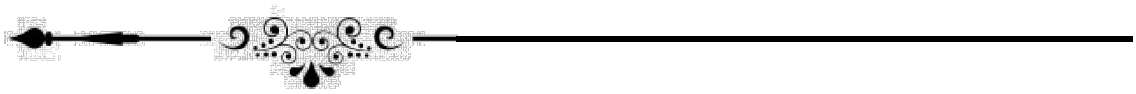
- **Anterior spondylotic changes in L4 & L5 vertebra.**

Dr. A.GOPINATH,MD(RD)
CONSULTANT RADIOLOGIST
Ph.No:8870009015

Note: *This imaging modality has its own limitations. Hence it should be correlated with clinical & other parameters. Patient`s identity is not verified.*

B, Thiruchendur Road, (Near Murugankuruchi Signal)
Jayamkottai, TIRUNELVELI - 627 002.
0462 - 2583222, 0462 - 4000014 email : baraniscans@yahoo.com

Discussion



DISCUSSION

Thandagavatham is one among the vatha noigal and it is mentioned by Yugi Munivar in "Yugi vaithiya Cindhamani-800". **Thandaga vatham** clinical features can be correlated with **lumbar spondylosis** in modern medicine. 20 IP cases and 20 OP cases were selected for treatment with main clinical features of **Thandagea vatham** is pain in low back area, Stiffness and restricted movements. The diagnosis was carried out by modern and siddha diagnostic tools was confirmed and treatment with trial medicine were clearly observed.

The observations were discussed here under:

1. **Incidence with Age Distribution :**

   The disease was found to be higher in the age group of 31-50 in OP & 51-60 in IP (OP-60 % & IP– 75%)

2. **Incidence with Sex Distribution:**

   - 55% of the In patients were Males and 45% of the In Patients were Females
   - 55% of the Out patients were Males and 50% of the Out Patients were Females

3. **Incidence reference to Religion:**

   Among the 40 patients the incidence was found to be higher in Hindus (OP- 90% & IP – 80%)

4. **Incidence with reference to Occupation:**

   Occupation of most of the patients strained themselves to heavy worker, lift heavy weight, long travelling. This may be the reason for these patients to develop **Thandaga vatham**.

5. **Incidence with reference to Socio Economic Status:**

   In this clinical study most of patients were from middle income class in (OP 65% & IP 7 5 %)

6. **Incidence with reference to Diet:**

Most of the patients belongs to non -vegetarian (OP-80% & IP – 90%)

7. Incidence with reference to Aetiological Factor:

Age, obesity occupation were the main precipitating factor in majority of the cases.

8. Incidence with reference to Mode of Onset:

All the patients were observed in chronic state.

9. Incidence with duration of illness:

Duration of illness in majority of the cases were observed in 1-3 Months in OP & above 12 Months in IP.

10. Incidence with Clinical Manifestation:

100% of the both OP&IP Patients had Pain in the Low back area. Radiating pain is the lower limbs, restricted movements, tenderness, numbness were sign and symptoms present in variable number among the patients under the study.

11. Distribution according to Kaalam:

Greater part of the cases belonged to Pitha kaalam which is commonly the period of degeneration (OP – 80% & IP-100%)

12. Incidence with reference to Constitution of the Body:

Vatha thegi patient were more affected (OP-45% & IP-55%)

13. Incidence with reference to Gunam:

All inpatients and out patients had Rajogunam.

14. Incidence with Thinai:

Most of the cases reported were from Marutham (OP-90% & IP-90%)

15. Incidence with reference to the Gnanendrium:

Mei was affected in all cases (100 % in both IP & OP).

16. Incidence with reference to the Kanmendrium:

Kaal was affected in 65% of OP cases & 75% of IP cases. Eruvai was affected in 35% of OP & 25% of IP Cases.

17. Incidence with reference to Kosam:

Annamaya kosam was affected in 30% of both Op & IP cases.

Vingana mayakosam was affected in 50% of OP cases & 55% of IP Cases.

18. Conditions of Mukkuttram:

a. Disturbance in Vatham:

Viyanan and Samanan was affected in 100% of the patients in both OP & IP.

Abanan was affected in 35% of OP & 25% of IP.

Kirukaran was affected in 30% of both OP & IP patients.

b. Disturbance in Pitham:

Among the 40 patients observed anala pitham was affected in 30% of both Op & IP Cases.

Ranjagam was affected in 10% of OP cases & 10% of IP cases.

Sathagam was affected in all 40 cases which produce difficulty in performing regular daily activities.

c. Disturbance in Kabham:

Kilaethagam was affected in 30% of both OP & IP cases .Santhigam was affected in 100% of OP & IP cases.

19. Incidence with reference to Udal Thathukkal:

Saaram, senner, oon, kozhuppu, enbu, moolai, sukkilam/suronitham were affected in 100% of Both OP & IP. Disturbance of saaram produced symptoms like lethargy and mental depression. Disturbance in senner was associated with anemia. Disturbance of kozhuppu and enbu produced symptoms like restricted movements & osteophytic changes in the lumbar vertebras.

20. Incidence with reference to Envagai Thervugal:

Sparism was affected in 20% of Op cases & 30 % of IP cases.

Maalam was affected in 35% of OP & 25% of IP cases.

In the study all the Op & IP cases showed thontha naadi in which vathapitha naadi was predominant.

21. Incidence with reference to Neerkuri:

Niram was affected in 30% of Op cases & 35% of IP cases.

Nurai was affected in 10% of OP cases & 20% of IP cases.

Enjal was affected in 10% of OP cases & 15% of IP cases.

22. Incidence with reference to Neikuri:

Neikuri in majority of the cases showed that the oil dropped into the urine spreaded like a snake indicating the predominance of Vatha neer.

23. Incidence with reference to assessment to outcome in both IP & OP:

After treatment 65% of OP and 70% of IP cases had good improvement, 25% of OP& 20% of IP cases had moderate improvement.

24. Incidence with reference to Radiological Studies:

From X-ray lumbar spine (AP & Laterial view) 100% cases showed degenerative changes and osteophytic changes.

25. Incidence with reference to result:

65% of OP cases and 70% of IP cases showed good response. 25% of OP & 20% of IP cases showed moderate response.10% of both IP & OP cases showed poor response.

Modern Aspects:

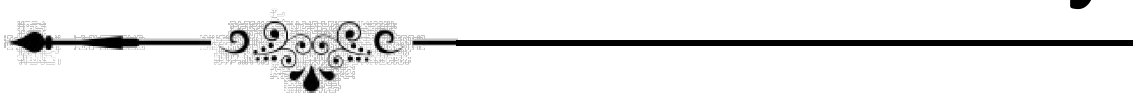
Routine clinical laboratory investigation (Blood,urine) were done on admission to rule out their abnormalities. X-ray were taken to confirm **Thandaga vatham.**

Treatment:

Internally – **Sagalavatha Chooranam** (2gm twice a day with water).

Medicines were administered to the patients for 30 days. It was found to the End of the results which showed very good clinical improvement. That is reducing low back ache and improved vertebra spinal movements.

Summary



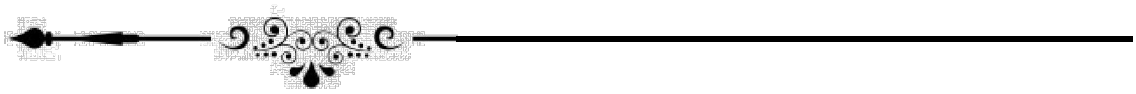
SUMMARY

- The disease **Thandaga vatham** was taken for the clinical study with reference in Yugi Vaidhiya Chinthamani. The disease is correlated with lumbar spondylosis in modern medicine. The clinical diagnosis was done on the basis of clinical features described in Yugi Vaidhya Chinthamani -800.
- The trial drug was chosen for the clinical study **Sagala Vatha Chooranam** (Internal) 2gms twice a day with water.
- The Definition, Aetiology, Pathology, Pathophysiology, Clinical features, Classification and Prognosis of the diseases were collected from a number of literatures both in Siddha System as well as in Modern system of medicine.
- For this study 20 cases were diagnosed clinically and admitted in the In patients ward and treated with trial drugs. Another 20 as Out patients. Most of the patients were followed in the Out patient department after discharge.
- The selection of cases and management of cases during admission and after treatment was carried out under the supervision of professor, Reader and Lecturer of P.G. Pothu maruthuvam Department.
- A case sheet proforma was prepared with particular reference to focusing Siddha and Modern clinical parameters.
- This disease predominantly affects males than females.
- The maximum incidence of age for this disease was between 30-60.
- To follow the prognosis of the patients the routine blood examination, estimation of blood sugar, blood urea, serum cholesterol and investigation of urine, were done before and after treatment.
- The patients taken for the clinical study were observed for a period of 30 days during and after the course of treatment, no signs of

complications were reported. Clinically the trial medicines were used only after careful purification process.

- The pharmacological evaluation of **Sagalavatha Chooranam** showed moderate analgesic action, significant anti- inflammatory action. No acute toxic effects were noted.
- Bio-chemical analysis of **SAGALA VATHA CHOORANAM** showed the presence of Calcium, Starch, Ferrous iron, Unsaturated compound, Tannic acid and Amino acid.
- On the basis of symptoms relieved and results observed during the study, the clinical improvement was graded as Good, mild, moderate.
- IN patients were discharged only after satisfactory clinical improvement and they are adviced to follow up the OUT patients ward.
- The improvement was observed only clinically and there was no changes in radiological findings.
- At the end of the treatment there was marked reduction of clinical symptoms like back pain with stiffness (which is the classical symptoms of **THANDAGA VATHAM**) with sense of well-being.

Conclusion



CONCLUSION

- The clinical trial medicine choosen for the clinical study was **Sagalavatha Chooranam** (Internal) 2gms twice a day with water.
- In this clinical study the trial medicine were free from side effects and adverse reactions and also acute toxic effects.
- The trial medicine has good Pharmacological Action.
- **Sagalavatha Chooranam** is moderately reduced the symptoms. So the patients were found to be satisfactory in 70% of cases.
- In long standing cases fair result were found.
- So, the **Thandaga vatham** is controllable disease along with **Sagalavatha Chooranam.**

Annexure - I

ANNEXURE I

PREPARATION OF TRIAL MEDICINE

PREPARATION OF SAGALA VATHA CHOORANAM

INGREDIENTS:

- ✓ Kodiveli vaer - 175gms
- ✓ Milagaranai vaer - 175gms
- ✓ Notchi vaer - 175gms

METHOD OF PREPARATION:

Purified raw drugs are taken and powdered separately. Then the powders of all the drugs are mixed well and then it filtered using pure white cloth and kept in airtight container.

DOSAGE : 2gm Bd

ADJUVANT : Water

INDICATION: Sagala Vatha Noigal

EXPIRY : 3 Months from the Date of Preparation

REFERENCE: Aathmarakshamirtham pg 308

PROPERTIES OF THE INGREDIENTS

KODIVELI

BOTANICAL NAME : *Plumbago indica*

FAMILY NAME : Plumbaginaceae

வேறு பெயர்கள் : அணிஞ்சில், அதிகநாரி, அதிபதுங்கி, அழல், உதாசனன், எரி, எழுநா, ஒலி, கருநாகம் , கனலி, காரிமை, கொடிவேலி, கானிலிந்திரன், கானிலம், கொடிச்சி, சித்திரமூலி, சித்திரமூலம், சித்திரம், ஞெகிழி, தழல், திக்கு, திசைநா, வஞ்சதாரம், வன்னி, அக்னி, அதிசனசி, உதகவன், சதாவேதா, சித்திரகம், தபனன், திகனா, வசகம், வனமா, வன்னிபரியம், சித்ரகம், கொடிவன்னி, வலிவன்னி, திவிபிநாமம்.

PART USED : Root Bark

SUVAI : Karppu

THANMAI : Veppam

PIRIVU : Karppu

ACTIONS:

- Tonic
- Stomachic
- Anti -Periodic
- Diaphoretic
- Stimulant
- Rubefacient

CHEMICAL CONSTITUENTS:

- Plumbagic Acid
- Tanin
- Amino Acids
- Zeytanone
- Zylinone
- Plumbagin 0.91%

பொதுகுணம்:

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம்-முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்

கட்டி,புண், கழலை, வளிநோய், அரையாப்புக்கட்டி, குத்தல் ,சோபை, மூலரோகம், உதிரக்கட்டு நீரேற்றம், பெருவயிறு, இவைபோம்.

கட்டியே சூலைக்கட்டு கருதிடு குறிப்புண் கிரந்தி
ஒட்டுமே கரணத்தோடு முறுமரை யாப்பு மன்றி
விட்டிடா நெறிச்சு ரம்பின் வியன்விட மச்சு ரந்தான்
பொட்டெனப் பறந்து போகும் புகழ்கொடி வேலி கண்டால்

சூலைக்கட்டு, குறிப்புண் , கிரந்தி ,மேகப்புண் , நெறிசுரம் , நச்சுச்சுரம் ,முதலியவையுந் தீரும்.

PURIFICATION PROCESS:

The root is soaked in lime water for three hairs and then sun dried.

MILAKARANAI

BOTANICAL NAME : *Toddalia asiatica*

FAMILY NAME : Rutaceae

PART USED : Root Bark

SUVAI : Thuvarpu

THANMAI : Thatpam

PIRIVU : Karpu

ACTIONS:

- ✓ Stimulant
- ✓ Tonic
- ✓ Carminative
- ✓ Diaphoretic
- ✓ Anti-periodic

CHEMICAL CONSTITUENTS:

- Resin
- Essential oil
- Citric Acid
- Berberine

பொதுகுணம்:

ஐயம கற்றும் அசீரணவா தம்போக்குஞ்

செய்யபித்த சூலைகளைத் தீர்க்குங்காண்-பையவரும்

ஈளை இருமல் இரைப்புப்பு சந்தொலைக்கும்

நாளு மிளகரணை நன்று.

(அ.கு)

ஐயம் ,ஐயப்பெருக்கு ,செரியாத வாயு ,அகட்டுவாயு ,அழல்சூலை ,இருமல், இரைப்பு, வயிற்றுப்பிசம் ஆகிய இவைகளை நீக்கும்.

PURIFICATION PROCESS:

The root is clean with water and allowed it to dry.

NOTCHI

BOTANICAL NAME : *Vitex Negundo*

FAMILY NAME : Nerbenaceae

வேறு பெயர்கள் : இந்திரசூரியம், நித்தில், நிர்க்குண்டி, நெர்க்குண்டி, சிந்தும,சிந்துவாரம்

PART USED : Root Bark

SUVAI : Kaipu, Thuvarpu, Karpu

THANMAI : Veppam

PIRIVU : Karppu

ACTIONS:

- ❖ Alterative
- ❖ Vermifuge
- ❖ Febrifuge
- ❖ Expectorant
- ❖ Diuretic
- ❖ Astringent
- ❖ Refrigerant

CHEMICAL CONSTITUTIONS:

- ✓ Organic Acid
- ✓ Malic Acid

பொதுகுணம்:

நோயா கலியை நொடிக்கு ளருந்தவெம்மை
யோயா மணாளு முயர்த்துதலுக்-காய
வந்தமுதல் நண்பாகி வாதத்தை யேயறவாற்
சிந்துவா ரங்கனலுந் தீ. - (தேரன்-வெண்பா)
கர நொச்சிற் பட்டையது துள்ளுசன்னி வாத மகற்றும்
(அ.கு.)

முப்பிணியும் வளி நோயும் போகும்.

PURIFICATION PROCESS:

The root is cleaned with water and then allowed it to dry.

INCREDIENTS OF SAGALA VATHA CHOORANAM

NOCHI VAER

MILAKARANAI VAER

KODIVELI VAER

SAGALA VATHA CHOORANAM

Annexure - II

ANNEXURE - II

BIO CHEMICAL ANALYSIS OF

SAGALA VATHA CHOORANAM

PREPARATION OF THE EXTRACT

5 gms of the drug was weighed accurately and placed in 250ml clean beaker. Then 50ml of distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 10ml volumetric flask and then it is makeup to 100ml with distilled water. This fluid is taken for analysis.

QUALITATIVE ANALYSIS:

SL. NO	EXPERIMENT	OBSERVATION	INFERENCE
1	**TEST FOR CALCIUM:** 2 ml of the above prepared extract is taken in a clean test tube. To this add 2ml of 4% Ammonium Oxalate solution.	A white precipitate is formed	Indicates the presence of calcium
2	**TEST FOR SULPHATE:** 2ml of the extract is added to 5% barium chloride solution.	No white precipitate is formed	Absence of Sulphate
3	**TEST FOR CHLORIDE:** The extract is added with silver nitrate solution	No white precipitate is formed	Absence of Chloride
4	**TEST FOR CARBONATE:** The substance is treated with concentrated Hcl	No brisk effervessence its formed	Absence of Carbonate
5	**TEST FOR STARCH:** The extract is added with weak iodine solution.	Blue colour is formed	Indicates the presence of starch
6	**TEST FOR IRON FERRIC:** The extract is acidified with Glacial acetic acid and potassium ferrocyanide.	No Blue colour is formed	Absence of Ferric Iron
7	**TEST FOR IRON FERROUS:** The extract is treated with concentrated Nitric acid and	Blood red colour is formed	Indicates the presence of Ferrous Iron

	Ammonium thiocyanate solution.		
8	**TEST FOR PHOSPHATE:** The extract is treated with Ammonium Molybdate and concentrated nitric acid.	No yellow precipitate is formed	Absence of Phosphate
9	**TEST FOR ALBUMIN:** The extract is trated with Esbach's Reagent.	No yellow precipitate is formed.	Absence of Albumin
10	**TEST FOR TANNIC ACID:** The extract is treated with ferric chloride.	Blue black precipitateis formed	Indicates the presence of Tannic acid
11	**TEST FOR UNSTURATION:** Potassium permanganate solution is added to the extract.	It gets decolourised	Indicates the presence of Unsaturated compound
12	**TEST FOR THE REDUCING SUGAR:** 5 ml of Benidict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.	No colour change occurs	Absence of Reducing Sugar
13	**TEST FOR AMINO ACID:** One or Two drops of the extract is placed on a filter paper and dried it well. After drying, 1% Ninnydrin is sprayed over the same and dried it well.	Violet colour is formed	Indicates the presence of Amino acid
14	**TEST FOR ZINC:** The extract is treated with potassium Ferrocyanide.	No white precipitate is formed	Absence of zinc

INFERENCE:

Bio chemical analysis of **Sagala Vatha chooranam** showed the presence of Calcium, Starch, Ferrous Iron, Tannic acid, Amino acid and Unsaturated compound,

Annexure - III

ANNEXURE III

PHARMACOLOGICAL ANALYSIS OF SAGALA VATHA CHOORANAM

ANALGESIC ACTIVITY

Analgesic activity of *Sagalavatha Chooranam* against acetic acid induced writhing reflux in mice

Analgesic activity of *Sagalavatha Chooranam* at a dose of 100 mg/kg and 200 mg/kg was evaluated by acetic acid induced writhing reflux in mice. Painful reactions in animals may be produced by the chemicals such as phenylquinolone, bradykinin etc. like that, acetic acid pain reaction which is characterized as a writhing response. Construction of abdomen, turning of trunk (twist) and extension of hind legs are taken as reaction to chemically induced pain. Analgesics (both narcotic and non-narcotic) inhibit writhing response.

Requirements

Animal: Swiss albino mice (20 – 25g) either sex

Drugs and chemicals: Diclofenac sodium (standard),

Acetic acid (1%),

Sagalavatha Chooranam

Method

Treatment protocol

Group- 1: Treated as normal control received 10ml/kg of normal saline through orally

Group- 2: treated as standard control received 10mg/kg of diclofenac sodium through orally

Group- 3: treated as Test-I received 100mg/kg of *Sagalavatha Chooranam* with 2 ml of sterile water through orally

Group- 4: treated as Test- II received 200mg/kg of *Sagalavatha Chooranam* with 2 ml of sterile water through orally

Both dose of *Sagalavatha Chooranam* were administered one hour prior to the acetic acid administration. Note the onset on writhing. Record the numbers of abdominal contractions, trunk twist and extension of hind limbs as well as the number of animals showing such response during a period of 10 minutes were noted.

Statistics

Data are expressed as mean ± SEM; data analyzed by one way ANOVA followed by Dunnet's multiple range tests to determine the significance of the difference between the control group and rats treated with extracts.

* Values were considered significant at $P < 0.01$.

Table - 1

Analgesic activity of *Sagalavatha Chooranam* against acetic acid induced writhing reflux in mice

Treatment	Dose (mg/kg)	No. of writhing	% reduction in reaction time
Group I Normal saline	Inject 1%v/v acetic acid 1ml/100g of body weight	35.2 ± 2.6	-
Group II Standard	10mg/kg Diclofenac sodium through orally	7.5 ± 0.7	65.70***
Group III *Sagalavatha Chooranam*	100mg/kg administered through orally	12.95 ± 0.4	59.01***
Group IV	200mg/kg administered	11.92 ± 0.3	61.38***

Sagalavatha Chooranam	through orally		

Values are expressed as mean ± SEM

Values are analysed by one way ANOVA followed by Dunnet's multiple range tests

*** Values were considered significant at $P < 0.001$.

Results

The table values show that analgesic activity of *Sagalavatha Chooranam* at a dose of 100mg/kg and 200mg/kg by acetic acid induced writhing reflex. The result reveals that both doses of *Sagalavatha Chooranam* possess significant analgesic activity at $P < 0.001$.

ACUTE TOXICITY STUDY

Acute oral toxicity refers to those adverse effects occurring following oral administration of a single dose of a substance or multiple doses given within 24 hours. Acute toxic class method (OECD guidelines 423, (2000) was followed to arrive at the maximum safety dose of the drug extracts. Three Wistar strain female albino rats (8-12 weeks old, 180-200g body weight) were used in each group. Single dose (2g/kg) of the *Sagalavatha Chooranam* was orally administered to overnight fasted (food but not water withheld) animas while control animals received the vehicle (0.3%w/v CMC). Animals were observed individually after dosing at least once during the first 4 hrs and daily thereafter, for a total of 14days. Body weights of the animals were recorded. The other observations include changes for skin, fur, eyes and mucous membranes, respiratory, circulatory and autonomic and central nervous system and somatomotor activity and behavior pattern. At the end of 14 days, all animals were subjected to gross necropsy.

Statistics

Data are expressed as mean ± SEM; data analyzed by one way ANOVA followed by Dunnet's multiple range tests to determine the significance of the difference between the control group and rats treated with test compounds.

* Values were considered significant at $P < 0.5$.

Results

Acute toxicity study

All of the rats fed with the food sample showed normal general behavior, respiratory pattern, cardiovascular signs, motor activities, reflexes and normal change in skin and fur.

Table - 2

Hematological values of *Sagalavatha Chooranam* in the acute toxicity study

S. No	Parameter	Control	Sample 2g/kg
1	White blood cells ($x10^3$/µl)	9.36±0.54	8.98 ± 0.26
2	Hemoglobin (g/dl)	11.50±0.26	12.95 ± 0.65
3	Mean corpuscular volume	60.45±2.3	58.91 ± 0.95
4	Mean corpuscular hemoglobin conc. (g/dl)	34.56±0.86	28.91 ± 0.39
5	Platelet ($x10^5$/µl)	5.60±0.52	4.98 ± 0.60
6	Red blood cell ($x10^6$/µl)	3.87±0.24	2.97 ± 0.35

Values are expresses as Mean ± S.E.M.

All groups were treated with oral dose of 2g/kg body weight

No significant different from normal control

Table - 3

Blood chemical values of food sample in the acute toxicity study

S. No	Parameter	Control	Sample 2g/kg
1	Glucose (mg/dl)	148.75±3.96	132.90 ± 1.92
2	BUN(mg/dl)	34.26±1.23	29.10 ± 0.51
3	Creatinine(mg/dl)	0.46±0.06	0.30 ± 0.01
4	Total protein (g/dl)	5.48±0.23	4.09 ±0.20
5	Albumin (g/dl)	3.49±0.62	2.91 ± 1.04
6	Total bilirubin (mg/dl)	0.26±0.02	0.31 ± 0.01
7	AST (u/l)	141.5±3.76	131.02 ± 1.92
8	ALT (u/l)	86.36±1.75	90.12 ± 0. 21
9	ALP (u/l)	75.57±2.16	80.91 ± 0.31

Values are expresses as Mean ± S.E.M.

All groups were treated with oral dose of 2g/kg body weight

No significant different from normal control

Discussion and conclusion

In acute toxicity study for 14 days, at a dose of 2g/kg of *Sagalavatha Chooranam* sample were chosen for the experiment. In the aspect of general behaviors, the rats treated with food sample at a single dose had no signs of behavior changes and toxic signs. The treated groups revealed no significant differences in body weight gain. The increase in body weight may have resulted from physiological changes in rats such as metabolism, food and water intake. However, the result from animal health monitoring in the entire period of 14days showed no sign of morbidity and diseases.

The albino Wistar rats were healthy as shown by the normal appearance of general behavior, respiratory pattern, cardiovascular signs, motor activities, reflexes and normal change in skin fur.

With regards to hematological values, most of values in treated groups were normal in comparison with the control group. Significantly, some values were different from those of the control group such as RBC, MCV, MCHC, and platelet. However, such values are within the normal ranges. These variations may have resulted from variation among animal groups (Feldman et al., 2000) (Inala et al., 2002). Therefore, these results suggest that the test drug did not cause hematological or immunological defects in rats.

Furthermore, blood chemical examination was performed in order to evaluate any toxic effects on liver. In this study, the levels of these blood chemical values were minor changes and remained within the normal range (Casley and King, 1980) (Levine, 1995) (Angkhasirisap et al., 2002).

In conclusion, *Sagalavatha Chooranam* sample given orally to Wistar rats did not produce toxicities.

ANTI-INFLAMMATORY ACTIVITY

Anti-inflammatory activity of *Sagalavatha Chooranam* against Carrageenan induced paw edema in rats

The anti-inflammatory activities of *Sagalavatha Chooranam* at a dose of 100mg/kg and 200mg/kg body weight were evaluated using Carrageenan induced paw edema method. The inflammation was readily produced in the form of edema with the help of the irritant such as carrageenan. Carrageenan is a sulphated polysaccharide obtained from sea weed (Rhodophyceae) and when injected cause the release of prostaglandins by the way it produces inflammation and edema.

Requirements

Animal: Albino rat (180 – 200g)

Drugs and chemicals: Diclofenac sodium (standard),

Carrageenan (1%), *Sagalavatha Chooranam*

Digital plethysmometer UGO Basile (Italy)

Method

The animals were divided into 4 groups each having six animals

Treatment protocol

Group- 1: Treated as normal control received 10ml/kg of normal saline through orally

Group- 2: Treated as standard control received 10mg/kg of diclofenac sodium through orally

Group- 3: Treated as treatment control received 100mg/kg of *Sagalavatha Chooranam* with 2 ml of sterile water through orally

Group- 4: Treated as treatment control received 200mg/kg of *Sagalavatha Chooranam* with 2 ml of sterile water administered through orally

A freshly prepared suspension of carrageenan (1% w/v, 0.1ml) was injected to the plantar region of left hind paw of each rat. One group was kept as control and the animals of the other groups were pretreated with *Sagalavatha Chooranam* given through orally 60 min before the carrageenan treatment. The paw volumes of the test compounds, standard and control groups were measured at 60, 120, 180 minutes of carrageenan treatment with the help of Digital plethysmometer UGO Basile (Italy). Mean increase in paw volume was measured and the percentage of inhibition was calculated.

% anti-inflammatory activity = (Vc – Vt/Vc) x 100

Where Vt is mean increase in paw volume in rats treated with test compounds

Vc is mean increase in paw volume in control group of rats

Statistics

Data are expressed as mean ± SEM; data analysed by one way ANOVA followed by Dunnet's multiple range tests to determine the significance of the difference between the control group and rats treated with test compounds.

* Values were considered significant at $P < 0.01$.

Anti-inflammatory activity of *Sagalavatha Chooranam* against Carrageenan induced paw edema in rats

Treatment	Dose (mg/kg)	Paw volume(ml) as measured at 3 hour	Percentage inhibition of paw edema
Group I Normal saline	5ml/kg orally	4.95 ± 0.76	
Group II Standard	10mg/kg Diclofenac sodium through orally	1.98 ± 0.26	69.01**
Group III *Sagalavatha Chooranam*	100mg/kg administered through orally	3.01 ± 0.45	50.95**
Group IV *Sagalavatha Chooranam*	200mg/kg administered through orally	2.08 ± 0.54	51.02**

Values are expressed as mean ± SEM

Values are analyzed by one way ANOVA followed by Dunnet's multiple range tests, to determine the significance of the difference between the control group and rats treated with the test compounds.

** Values were considered significant at $P < 0.01$.

Results

Sagalavatha Chooranam at a dose of 100 and 200mg/kg were tested for their anti-inflammatory activity by using carrageenan induced rat paw edema method and the results are tabulated in table. The results reveals that both doses of ***Sagalavatha Chooranam*** 100 and 200mg/kg possess significant anti-inflammatory activity when compared to control group at $p<0.01$.

Annexure - IV

ANNEXURE IV

PROFORMA OF CASE SHEET

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH SAGALAVATHA CHOORANAM

FORM-I

(SCREENING AND SELECTION PROFORMA)

1. Name_____ 2. Age_____ 3.Gender_____ 4.Phone no _____

5. OP No/IP No————— 6. S No. _____ 7. Occupation _____

8. Income _____

INCLUSION CRITERIA:

- Age : 20 - 60Yrs
- Sex : Both male and female
- Patients having symptoms of pain in the low back area, radiating pain to buttocks and lower limbs
- Stiffness present in the low back area
- Exacerbation of pain on movements
- Pain increased on forward bending ,tingling sensation
- Patients who are willing for admission and stay in IP for minimum 20-30 days or willing to attend OPD
- Patient who are willing to undergo radiological investigation and give blood and urine samples for laboratory investigation.
- Patient willing to sign the informed consent stating than he/she will consciously stick to the treatment during 30 days but can opt out of the trial of his/her own conscious discretion.

- Patients complaining of back pain functional scale score should be range from below 30.

EXCLUSION CRITERIA

- Systemic Hypertension
- Diabetes mellitus
- Cardiac disease
- Auto immune diseases like Rheumatoid arthritis, SLE, Psoriasis, Mixed connective tissue disorder.
- Spina bifida
- Liver Disease
- Pregnancy and lactation
- Osteo myelitis
- Renal Disease
- Tuberculosis in spine
- Patient with any other serious illness

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD:**

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASEII RANDOMIZED CLINICAL TRIAL ON THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH SAGALA VATHA CHOORANAM

FORM l A

HISTORY PROFORMA ON ENROLLMENT

1. Serial No of the case: _____ 2. OP/IP No:_____

3. Name: _____4. Gender: Male ☐ Female ☐

5. Age (years): _____ DOB: ☐☐ ☐☐ ☐☐☐☐

6. Address: _____

_____

_____

7. A. Occupation: _____ B. Nature of work _____

8. Educational Status: A) Illiterate ☐ B) Literate ☐

9. Height: _____ cms 10.Weight: _____kg

11. Complaints and Duration:

_____

_____

12. Past History:

Systemic Hypertension _____

Diabetes mellitus _____

Asthma _____

PT _____

13. Habits:

A) Smoking: 1. Yes ☐ **Duration _____ years; Number - _____ 2. No** ☐

B) Alcoholism: 1. Yes ☐ **Duration _____ years; Quantity-____ ml 2. No** ☐

C) Tobacco chewing: 1. Yes ☐ **Duration ____ years 2.No** ☐

D) Betel chewing: 1. Yes ☐ **Duration _____years 2.No** ☐

14. Dietary style: A. Pure vegetarian ☐ **B. Non-vegetarian** ☐

15. Drug history: Had the patient been treated before with allopathy drug?

A) Yes ☐ **2) No** ☐

16. Marital status: 1.Married ☐ **2.Unmarried** ☐

17. Family history:

Whether this problem runs in family? 1. Yes ☐ **2.No** ☐

If yes, mention the relationship of affected person(s)

_____

18. Bowel habits & micturition: Normal ☐

History of habitual constipation **1.Yes** ☐ **2.No** ☐

History of frequent diarrhoea **1.Yes** ☐ **2.No** ☐

History of frequent dysuria **1.Yes** ☐ **2.No** ☐

19. Psychological state: Normal ☐ **Anxiety** ☐ **Depression** ☐

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL, PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON

THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH

SAGALA VATHA CHOORANAM

FORM II & II-A

CLINICAL ASSESSMENT ON ENROLLMENT AND ON VISITS

1. S.NO: _____ 2. OP/IP NO : _____

3. Name**:** _____ 4. Gender : _____

5. Date of Assessment: _____

SIDDHA SYSTEM OF EXAMINATION:

1. ENVAGAI THERVU: [EIGHT-FOLD EXAMINATION]

I. NAADI: [PULSE PERCEPTION]

	0st Day	**07th Day**	**15th Day**	**21st Day**	**28th Day**	**30th Day**
Vali						
Azhal						
Iyyam						
Vali Azhal						
Azhal vali						
Iyya vali						
Vali Iyyam						
Azhal Iyyam						
Iyya Azhal						

II. . SPARISAM: [PALPATORY PERCEPTION]

0th Day	**7th day**	**14th Day**	**21st Day**	**28thDay**	**30th day**
Warmth/ Cold/ Sweat	Warmth/ Cold/ Sweat	Warmth/ Cold/ Sweat	Warmth/ Cold/ Sweat	Warmth/ Cold/ Sweat	Warmth/ Cold/ Sweat

III NAA:[TONGUE]

	0th Day	**07th Day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Colour	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale
Taste	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None
Coating	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Fissure	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Saliva	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased
Dryness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Glossitis	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

IV.NIRAM: COMPLEXION

0th Day	**07th day**	**14th Day**	**21st Day**	**28th Day**	**30th day**
Dark/ Yellow/ Tinted/ Pale	Dark/ Yellow/ Tinted/ Pale	Dark/ Yellow/ Tinted/ Pale	Dark/ Yellow/ Tinted/ Pale	Dark/ Yellow/ Tinted/ Pale	Dark/ Yellow/ Tinted/ Pale

V.VIZHI: [EYES] (Lower palpebral conjunctiva)

0th Day	**07th day**	**14th Day**	**21st Day**	**28th Day**	**30th day**
Dark/ Yellow / Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale

VI.MOZHI: [VOICE]

0th Day	07th day	14th Day	21st Day	28th Day	30th day
Medium/ High/ Low / Pitched	Medium/ High/ Low/ Pitched	Medium/ High/ Low/ pitched	Medium/ High/ Low/ pitched	Medium/ High/ Low/ pitched	Medium/ High/ Low/ pitched

VII. MALAM; [BOWEL HABITS / STOOLS]

	0th Day	**07th Day**	**14th Day**	**21stDay**	**28th Day**	**30th day**
Colour	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale
Consistency	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery

Stool bulk	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced
Constipation	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Diarrhoea	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

VIII. URINE EXAMINATION:

NEERKURI	**0th Day**	**07th day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Niram [Colour]	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw Coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear	White/ Yellowish/ Straw coloured/ Crystal clear
Manam [Odour]	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Nurai [Froth]	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased
Edai [Sp.gravity]	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced
Enjal [Deposits]	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Volume	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased / Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced

NEIKURI	0th Day	7th day	14th Day	21st Day	28th Day	30th Day
Serpentine fashion						
Annular/Ringed fashion						
Pearlbeaded fashion						
Mixed fashion						
Other fashion						

2. THEGI: [TYPE OF BODY CONSTITUTION]

Vatham predominant		Kabam predominant	
Pitham predominant		Thondha udal	

3. NILAM: [LAND WHERE PATIENT LIVED MOST]

Kurinji ☐ Mullai ☐ Marutham ☐ Neithal ☐ Palai ☐

(Hilly terrain) (Forest range) (Plains) (Coastal belt) (Arid regions)

4. KAALAM:

Kaarkalam - ☐ Pinpanikalam - ☐

Koothirkalam - ☐ Ilavenil - ☐

Munpanikalam - ☐ Muthuvenil - ☐

5. GUNAM:

Sathuvam - ☐ Rasatham - ☐ Thamasam - ☐

6.IMPORIGAL (SENSORY ORGANS):

IMPORIGAL	0th Day	7th day	14th Day	21st Day	28th Day	30th Day
Mei (Skin)						
Vai (Buccal Cavity)						
Kann (Eye)						
Sevi (Ear)						
Mooku (Nose)						

7. KANMENDRIYAM :(MOTOR ORGANS)

KANMENDRIYAM	0th Day	7th day	14th Day	21st Day	28th Day	30th Day
Kai (upper limb)						
Kaal (lower limbs)						
Vai (buccal cavity)						
Eruvaai (excretory organs)						
Karuvaai (reproductive organs)						

8. KOSANGAL :(Sheath)

KOSANGAL	0th Day	7th day	14th Day	21st Day	28th Day	30th Day
Annamaya Kosam						
Pranamaya kosam						
Manomaya kosam						
Vignanamaya kosam						
Ananthamaya kosam						

9. MUKKUTRAM: [AFFECTION OF THREE HUMORS]

A) VATHAM:

VATHAM	0th Day	7th day	14th Day	21st Day	28th Day	30th Day
Praanan						
Abaanan						
Viyaanan						
Udhaanan						
Samanan						
Naagan						
Koorman						
Kirukaran						
Devathathan						

Dhananjeyan						

B) PITHAM:

PITHAM	**0th Day**	**7th day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Analapitham						
Ranjagam						
Saathagam						
Praasagam						
Aalosagam						

C) KABHAM:

KABHAM	**0th Day**	**7th Day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Avalambagam						
Kilaethagam						
Pothagam						
Tharpagam						
Santhigam						

10. SEVEN DHATHUS: (7 SOMATIC COMPONENTS)

SEVEN DHATHUS	**0th Day**	**7th day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Saaram [Chyme]						
Senneer [Blood]						

Oon [Muscle]						
Kozhuppu [Fat]						
Enbu [Bones]						
Moolai [Bonemarrow]						
Sukkilam/Suronitham [Genital discharges]						

11. SYSTEMIC EXAMINATION:

SYSTEMIC EXAMINATION	**0th Day**	**7th Day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Locomotor system						
Cardiovascular system						
Respiratory system						
Gastro intestinal system						
Central nervous system						
Urogenital system						
Endocrine system						

12. GENERAL EXAMINATION:

GENERAL EXAMINATION	**0th Day**	**7th Day**	**14th Day**	**21st Day**	**28th Day**	**30th Day**
Height (cms)						
Weight (kg)						
Temperature (F^0)						
Pulse rate (per min)						
Heart rate (per min)						
Respiratory rate (per min)						
Blood pressure (mm/Hg)						
Pallor						
Jaundice						
Cyanosis						
Lymphadenopathy						
Pedal edema						
Clubbing						
Jugular vein pulsation						

13. CLINICAL SYMPTOMS:

COMPLAINTS	0th Day	7th Day	15th Day	30th Day
Pain in low back area				
Nature of pain				
Onset of pain				
Radiating pain to buttocks				
Radiating pain in right lower limb				
Radiating pain in left lower limb				
Pain increased on forward bending				
Sensory loss on affected area				
Numbness				
Tenderness				
Restriction of movements				
Burning sensation in its lower extremites				

The Back pain function scale (BPFS) of Stratford et al

over view

Stratford et al developed the Back Pain Function Scale (BPFS) to evaluation functional ability in patients with back pain. The authors are from McMaster University Appalachian Physical Therapy (Georgia) and Virginia Commonwealth University.

Measures:

(1) Any of your usual work housework or school activities

(2) Your usual hobbies recreational or sporting activities

(3) Performing heavy activities around your home

(4) Bending or stooping

(5) Putting your shoes or socks (or stockings or pantyhose)

(6) Lifting a box of groceries from the floor

(7) Sleeping

(8) Standing for 1 hour

(9) Walking 1 mile

(10) Going up or down 2 flights of stairs (about 20 steps)

(11) Sitting for 1 hour

(12) Driving for 1 hour

Responses	Points
unable to perform activity	0
extreme difficulty	1
quite a bit of difficulty	2
moderate difficulty	3

a little bit of difficulty	4
no difficulty	5

Total score = SUM (points for 12 measures)

Adjusted total score = (total score) / 60 Interpretation:

• Minimum score: 0

• Maximum score: 60

• Maximum adjusted score: 1 (100%)

• The higher the score the greater the patient's functional ability.

Total Score (Adjusted)	**Interpretation**
0 (0%)	unable to perform any activity
60 (100%)	no difficulty in any activity

References:

Stratford PW Binkley JM et al. Development and initial validation of the Back Pain Functional Scale.

Spine. 2000; 25: 2095-2102 (Appendix A page 2101).

14. BACK PAIN FUNCTIONAL SCALE SCORE:

SL. NO	PATIENT'S ACTIVITIES	NORMAL SCORE	PATIENT'S SCORE
1	Any of your usual work house work or school activities	5	
2	Your usual hobbies recreational or sporting activities	5	
3	Performing heavy activities around your house	5	
4	Bending or stooping	5	
5	Putting your shoes or socks	5	
6	Lifting a box of groceries from the floor	5	
7	Sleeping	5	
8	Standing for 1 hour	5	
9	Walking 1 mile	5	
10	Going up or down2 flights of stairs (20 steps)	5	
11	Sitting for 1 hour	5	
12	Driving for 1 hour	5	

(Minimum Score 0, Maximum Score 60)

PAIN SCORE	BEFORE TREATMENT	AFTER TREATMENT

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

15. CLINICAL EXAMINATION:

A. INSPECTION:

	0^{th} Day	7th Day	14th Day	21st Day	28th Day	30th Day
Attitude						
Muscle Wasting						
Swelling						

B.PALPATION:

	0^{th} Day	7th Day	14th Day	21st Day	28th Day	30th Day
Tenderness						
Muscle spasm						
Local heat						
Local lymph adenopathy						
Pitting oedema						
Joint stiffness						

C.MOVEMENTS:

	0^{th} Day	7th Day	14th Day	21st Day	28th Day	30th Day
Stiffness						
Restriction of movements						

Rotation						
Flexion						
Extension						
Lateral bending						

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer : **Signature of the HOD**

GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

POST-GRADUATE DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON

THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH

SAGALA VATHA CHOORANAM

FORM III-LABORATORY INVESTIGATIONS

1	Sl. No		2	OP/IP No	
3	Bed No		4	Name	
5	Age		6	Gender	

I.BLOOD

		Before Treatment	After Treatment
1	TC (cells/mm)		
2	DC (%)		
	a)Neutrophils		
	b)Lymphocytes		
	c)Monocytes		
	d)Eosinophils		
3	ESR(mm)		
	a)1/2 hour		
	b)1 hour		
4	Haemoglobin		
5	Blood sugar		
6	Blood urea		

7	Serum creatinine		
8	Serum cholesterol		
9	RA Factor		

II.URINE

		Before Treatment	After Treatment
1	Albumin		
2	Sugar		
3	Epithelial cells		
4	Pus cells		
5	Red blood cells		
6	Casts/Crystals		

III.RADIOLOGICAL FINDINGS

X-RAY FINDINGS	**BEFORE TREATMENT**	**AFTER TREATMENT**

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,
PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH SAGALA VATHA CHOORANAM

CONSENT FORM-IV A

Certificate by Investigator

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date: …….. Signature: …….

Name: ……..

Consent by Patient

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included

As a subject in the clinical trial of **SAGALA VATHA CHOORANAM for the management of THANDAGA VATHAM (LUMBAR SPONDYLOSIS)**

Date: …….. Signature: ……

Name: …….

Date: ……. Signature of Witness: …….

Name…….. ……

Relationship: …….

அரசினர் சித்த மருத்துவக் கல்லூரி மற்றும் மருத்துவமனை

பாளையங்கோட்டை

பட் ட மேற்படிப்பு பொது மருத்துவத்துறை

சகலவாத சூரணத்தின் பரிகரிப்புத்திறனைக் கண்டறியும் மருத்துவ ஆய்வு ஒப்புதல் படிவம் ஆய்வாளரால் சான்றளிக்கப்பட்டது.

நான் இந்த ஆய்வைக் குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் எனறு உறுதியளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறையைப் பற்றியும் தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனைப் பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

நான் என்னுடைய சுதந்திரமாகத் தேர்வுசெய்யும் உரிமையைக் கொண்டு தண்டக வாதம் நோய்க்கான சகலவாத சூரணத்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

சாட்சிக்காரர் கையொப்பம்:

பெயர்:

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON

THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH

SAGALA VATHA CHOORANAM

FORM IV B

WITHDRAWAL FORM

Name: _____ OPD/ IPD number: _____

Age : _____

Date of trial commencement: _____

Date of withdrawal from trial: _____

Reasons for withdrawal:

- Long absence at reporting : Yes ☐ No ☐
- Irregular treatment : Yes ☐ No ☐
- Shift of locality : Yes ☐ No ☐
- Increase in severity of symptoms :Yes ☐ No ☐
- Development of severe adverse drug reactions: Yes ☐ No ☐

Date:

Station:

SIGNATURE OF INVESTIGATOR:

SIGNATURE OF LECTURER: **SIGNATURE OF HOD**

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF MARUTHUVAM

PRECLINICAL AND PHASE-II RANDOMIZED OPEN CLINICAL STUDY ON THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH SAGALA VATHA CHOORANAM

FORM IV C

PATIENT INFORMATION SHEET

- It is a degenerative disc disease.
- This disease is not contagious.
- It primarily affects joint sand typically results in radiating pain to lower limbs and stiffness present lumbar region.
- Many herbal and mineral siddha medicines are currently practiced by the siddha practioners for this disease.
- The trial drug is prescribed only with evidence of siddha literature.
- The trial drug is prepared at the Gunapadam lab of government siddha medical college & hospital,palayamkottai, under the direct supervision of teaching faculties of Maruthuvam and Gunapadam Dept.

Details of the trial drug:

Drug	: **Sagalavatha Chooranam**
Dose	: 2gms; twice a day.
Adjuvant	: water
Duration	: 30 days.

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON

THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH

SAGALA VATHA CHOORANAM

FORM IV E

ADVERSE DRUG REACTION FORM

Name: _____ OPD/ IPD No : _____

Age: _____

Date of trial commencement: _____

Date of withdrawal from trial: _____

Description of adverse reaction:

_____

_____

Date:

Station:

SIGNATURE OF INVESTIGATOR: **SIGNATURE OF HOD**

SIGNATURE OF LECTURER:

GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,
PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRIAL ON

THANDAGA VATHAM (LUMBAR SPONDYLOSIS) WITH

SAGALA VATHA CHOORANAM

FORM IV –E

(DRUG COMPLIANCE FORM)

Name : _____ Age /sex:_____ S.No:_____

OP/IP No: _____ Date:_____ Bed No:_____

Name of the Drug : **SAGALA VATHA CHOORANAM**

Drugs issued date :

Drugs returned date :

S.NO	DATE	DRUG TAKEN TIME	
		MORNING TIME	EVENING TIME
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			
Day 6			
Day 7			
Day 8			
Day 9			

Day 10			
Day 11			
Day 12			
Day 13			
Day 14			
Day 15			
Day 16			
Day 17			
Day 18			
Day 19			
Day 20			
Day 21			
Day 22			
Day 23			
Day 24			
Day 25			
Day 26			
Day 27			
Day 28			
Day 29			
Day 30			

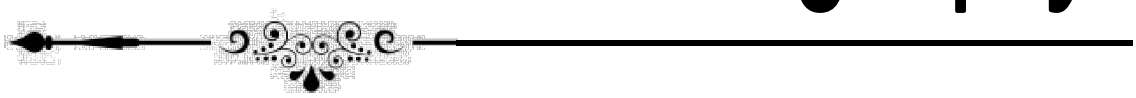
Date:

Station:

SIGNATURE OF INVESTIGATOR:

SIGNATURE OF LECTURER: **SIGNATURE OF HOD**

Bibliography



BIBLIOGRAPHY

1. Dr.Anbarasu.K, Yugi Vaithiya Chinthamani , July 2013

   2nd Editon, pg 109

2. Kuppusamy Mudaliyar K.N ,Siddha Maruthuvam (Pothu) – 2007, 7th edition,

   pg 594

3. Gandasamy Mudaliyar, Aathma Rakshamirtham Enum Vaithiya Sarasankiragam – published by rathana nayakar &sons, page 308
4. Kannusamy Pillai.C ,Sikitcharatna Deepam, 1993, 8th Edition,
5. Dr.Murugesha mudaliyar K.S, Gunapadam mooligai vaguppu –2002, 2nd Edition
6. Mr .Seetharaman .J, Anubhava vaidhya theva ragasiyam 1999, 1ST Edition.
7. Pararasasekaram
8. Agathiyar Vaidhya Chinthamani
9. Theraiyar Maruthu Bharatham
10. Thirukural
11. DR.Uthamarayan K.S, H.P.I.M ,Siddha Maruthuvanga Surukkam 2006, 2nd Edition
12. T.V. Samba Sivampillai Agarathy IV
13. Mr.Ramachandran S.P.,Agathiyar Ganma Gandam 1995, 1ST Edition
14. Theraiyar Venba
15. Dr .Venkatarajan S.,Thanvandhri Vaithiyam 1990, 2nd Edition.
16. Dr.Prema S., Theraiyar Gunavagadam 2006, 1ST Edition
17. Agathiyar Gunavagadam
18. Dr.Shunmuga velu M., H.P.I.M.,Noi Nadal Noi Mudal nadal Part I & II ,2006,
19. Agathiyar Rathina Surukkam
20. Robbin's & Cotran Pathalogic basis of disease
21. Indian Materia Medica Pg 1222, 1278
22. Saunders w.b., CECIL Text book of medicine and HBJ International edition by

19th Edition, pg 2236.

23. Sir stanly Davidson ,Davidson Principles and Practice of medicine,2010, 21th Edition
24. Marunthu sei iyalum kalaium
25. Stratford Pw Binkley JM et al. Development and initial Validation of the Back Pain Functional Scale spine 2000
26. B.D.Chaurasia's Human Anatomy Vol .I.
27. K.V.Krishna Das ,Text book of MEDICINE 3rd Edition
28. ASPI F.GOLWALLA, Golwalla's MEDICINE 23rd Edition
29. API text book of MEDICINE vol.2
30. www.Spine Universe.com.
31. Pharmacy of Govt. Siddha Medical College
32. Dr.venkatraran.S, LIM,Agathiyar -2000,1998.
33. DR.Alagappan .R.,Manual of practical medicine – 3rd Edition
34. www.emedicine.medscape.com
35. www.nibi.nlm.nic.gov.in
36. www.Health Central.com
37. www.Lumbar spondylosis.net.